DEVELOPMENTAL PSYCHOLOGY

A Life-Span Approach

Fifth Edition

ELIZABETH B. HURLOCK

For sale in India, Pakistan, Nepal, Bangladesh, Sri Lanka and Bhutan Only

Tata
McGraw-Hill
Edition

SHOUT
SHARE
IT

Tata McGraw-Hill

Developmental Psychology: A Life-Span Approach

Copyright © 1980, 1975, 1968, 1959 by The McGraw-Hill Companies, Inc., Copyright © 1953 by McGraw-Hill, Inc., All rights reserved.
No part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher, with the exception that the program listings may be entered, stored, and executed in a computer system, but they may not be reproduced for publication

Tata McGraw-Hill Edition 1981

40th reprint 2008
RALQCRYXRCZCC

Reprinted in India by arrangement with The McGraw-Hill Companies, Inc., New York

This edition can be exported from India only by the publishers, Tata McGraw-Hill Publishing Company Limited

ISBN-13: 978-0-07-099363-1
ISBN-10: 0-07-099363-7

Published by Tata McGraw-Hill Publishing Company Limited,
7 West Patel Nagar, New Delhi 110 008, and printed at
Gopaljee Enterprises, Delhi 110 053

The McGraw·Hill Companies

CONTENTS

Preface xiii

1 **GROWTH AND DECLINE** 1
Meaning of Developmental Changes 2
Significant Facts about Development 5
The Life Span 11
Recent Focus of Interest in the Life Span 14
Obstacles in Studying Life-Span Development 14
Results of Obstacles in Studying Development 18
Happiness and Unhappiness during the Life Span 19
Chapter Highlights 24
Bibliography 24

2 **THE PRENATAL PERIOD** 28
Characteristics of the Prenatal Period 29
How Life Begins 30
Importance of Conception 31
Periods of Prenatal Development 37
Attitudes of Significant People 37
Hazards during the Prenatal Period 41
Chapter Highlights 49
Bibliography 50

3 **INFANCY** 52
Characteristics of Infancy 53
Major Adjustments of Infancy 55
Conditions Influencing Adjustment to Postnatal Life 55
Characteristics of the Infant 61
Hazards of Infancy 67
Chapter Highlights 74
Bibliography 74

4 **BABYHOOD** 78
Characteristics of Babyhood 79
Developmental Tasks of Babyhood 81
Physical Development 82
Physiological Functions 82
Muscle Control 84
Speech Development 87

Emotional Behavior in Babyhood 89
Developments in Socialization 91
Beginnings of Interest in Play 92
Development of Understanding 95
Beginnings of Morality 96
Beginnings of Sex-Role Typing 97
Family Relationships 98
Personality Development in Babyhood 99
Hazards in Babyhood 101
Happiness in Babyhood 107
Chapter Highlights 108
Bibliography 109

5 EARLY CHILDHOOD 113
Characteristics of Early Childhood 114
Developmental Tasks of Early Childhood 115
Physical Development 116
Physiological Habits 116
Skills of Early Childhood 117
Improvements in Speech during Early Childhood 119
Emotions of Early Childhood 121
Socialization in Early Childhood 124
Play in Early Childhood 128
Development of Understanding 130
Moral Development in Early Childhood 132
Common Interests in Early Childhood 134
Sex-Role Typing in Early Childhood 137
Family Relationships in Early Childhood 138
Personality Development in Early Childhood 141
Hazards of Early Childhood 142
Happiness in Early Childhood 150
Chapter Highlights 150
Bibliography 151

6 LATE CHILDHOOD 155
Characteristics of Late Childhood 156
Developmental Tasks of Late Childhood 158
Physical Development in Late Childhood 158
Skills of Late Childhood 159
Speech Improvement in Late Childhood 161
Emotions and Emotional Expressions in Late Childhood 165
Social Groupings and Social Behavior in Late Childhood 166
Play Interests and Activities in Late Childhood 171

Increase in Understanding in Late Childhood 174
Moral Attitudes and Behavior in Late Childhood 174
Interests in Late Childhood 178
Sex-Role Typing in Late Childhood 179
Changes in Family Relationships in Late Childhood 182
Personality Changes in Late Childhood 184
Hazards of Late Childhood 186
Happiness in Late Childhood 190
Chapter Highlights 191
Bibliography 192

7 PUBERTY 196
Characteristics of Puberty 197
Criteria of Puberty 199
Causes of Puberty 199
Age of Puberty 199
The Puberty Growth Spurt 201
Body Changes at Puberty 201
Effects of Puberty Changes 204
Effects of Deviant Maturing 207
Sources of Concern 209
Hazards of Puberty 211
Unhappiness at Puberty 215
Chapter Highlights 217
Bibliography 217

8 ADOLESCENCE 221
The Adolescent Years 222
Characteristics of Adolescence 223
Developmental Tasks of Adolescence 225
Physical Changes during Adolescence 226
Emotionality during Adolescence 229
Social Changes during Adolescence 230
Some Adolescent Interests 234
Changes in Morality during Adolescence 242
Sex Interests and Sex Behavior during Adolescence 244
Approved Sex Roles during Adolescence 248
Family Relationships during Adolescence 250
Personality Changes during Adolescence 252
Hazards of Adolescence 253
Happiness in Adolescence 258
Chapter Highlights 258
Bibliography 259

9 EARLY ADULTHOOD: PERSONAL AND SOCIAL ADJUSTMENTS 264
Characteristics of Early Adulthood 265
Developmental Tasks of Early Adulthood 271
Changes in Interests in Early Adulthood 271
Social Mobility in Early Adulthood 283
Sex-Role Adjustments in Early Adulthood 284
Personal and Social Hazards of Early Adulthood 285
Chapter Highlights 290
Bibliography 291

10 EARLY ADULTHOOD: VOCATIONAL AND FAMILY ADJUSTMENTS 294
Vocational Adjustments 295
Marital Adjustments 305
Adjustment to Parenthood 310
Assessment of Marital Adjustment 312
Adjustment to Singlehood 314
Hazards of Vocational and Marital Adjustments during during Early Adulthood 316
Success of Adjustment to Adulthood 327
Chapter Highlights 328
Bibliography 329

11 MIDDLE AGE: PERSONAL AND SOCIAL ADJUSTMENTS 333
Characteristics of Middle Age 334
Developmental Tasks of Middle Age 339
Adjustments to Physical Changes 339
Assessment of Adjustment to Physical Changes 344
Adjustment to Mental Changes 345
Adjustment to Changed Interests 346
Social Adjustments 349
Personal and Social Hazards of Middle Age 351
Chapter Highlights 354
Bibliography 355

12 MIDDLE AGE: VOCATIONAL AND FAMILY ADJUSTMENTS 358
Vocational Adjustments 359
Adjustment to Changed Family Patterns 362

Adjustment to Singlehood 370
Adjustment to Loss of a Spouse 372
Adjustment to Approaching Retirement 374
Adjustment to Approaching Old Age 374
Vocational and Marital Hazards of Middle Age 375
Assessment of Adjustment to Middle Age 382
Chapter Highlights 385
Bibliography 386

13 OLD AGE: PERSONAL AND SOCIAL ADJUSTMENTS 389
Characteristics of Old Age 390
Developmental Tasks of Old Age 395
Adjustment to Physical Changes in Old Age 396
Changes in Motor Abilities in Old Age 399
Changes in Mental Abilities in Old Age 400
Changes in Interests in Old Age 402
Hazards to Personal and Social Adjustments in Old Age 413
Chapter Highlights 416
Bibliography 417

14 OLD AGE: VOCATIONAL AND FAMILY ADJUSTMENTS 421
Vocational Adjustments in Old Age 422
Adjustment to Retirement 424
Adjustments to Changes in Family Life in Old Age 427
Adjustment to Loss of a Spouse in Old Age 432
Remarriage in Old Age 433
Cohabitation in Old Age 434
Adjustment to Singlehood in Old Age 435
Living Arrangements for the Elderly 435
Geographic Mobility in Old Age 438
Vocational and Family-Life Hazards of Old Age 439
Assessment of Adjustments to Old Age 443
Chapter Highlights 449
Bibliography 450

Index 453

PREFACE

With the constantly growing volume of research in the area of development at all ages during the life span, bringing this textbook up to date has become increasingly difficult with each revision since it first appeared in 1953. The major task has been to be selective—to include pertinent new material, eliminate dated material, and to cut down on content with which students have become familiar in other courses.

To make this fourth revision a better learning tool for students and a better teaching tool for instructors, several changes have been made. The changes are:

First, many areas that are receiving considerable attention at present, but which are overlooked or touched on only slightly in many other developmental-psychology textbooks, are discussed in enough detail in this revision to emphasize their significance. Among these are discussions of the obstacles scientists encounter in investigating different aspects of development at different age levels; the ethical aspects of scientific research, especially when children and and the elderly are used as subjects; the importance of names, physical attractiveness, clothes, status symbols, alcohol, and drugs to the personal and social adjustments of individuals of different ages; the problems of divorce, widowhood, remarriage, cohabitation, retirement, and unemployment; and interest in death among the elderly.

Second, because of the many favorable comments from instructors and students about the use of boxes in the fourth edition of this text, new boxes have been added in this revision to highlight important facts and to summarize material from different research studies. It is hoped that these boxes, like those in the previous edition, will serve the purposes for which they were intended.

Third, as a result of the rapid growth of interest in middle and old age and the flood of research studies covering all aspects of life at these age levels, the chapters on middle and old age have been markedly expanded to include the most important of these new studies. This has necessitated shortening discussions of the earlier age periods, especially childhood and adolescence, both of which have already been studied in courses devoted to these age levels by many students now enrolled in a course in developmental psychology.

Fourth, more new cartoons have been included in this edition. The reason for this is that cartoons help to make important facts more meaningful and, therefore, easier to remember.

Fifth, more direct quotations from research studies have been given in this than in the previous edition because, when carefully selected, quotations help to highlight certain important facts that might be overlooked if they were summarized or introduced as a part of the text. Because quotations are set off from the remainder of the text, they call to the reader's attention that here is something important enough to read more slowly and carefully than the rest of the material.

Sixth, hazards to development at each age level, first introduced in the fourth edition of this text, have received such favorable comments from both instructors and students that most of them have been retained and new ones have been added. By so doing it is hoped that readers will fully appreciate why it is that variations in development occur at all ages, what are some of the common causes of these variations, and what, with this foreknowledge, might be done to minimize or eliminate the hazards.

Seventh, instead of giving paragraph summaries at the end of each chapter, a common technique used in many college textbooks, fifteen highlights are given. These serve to alert the reader to the important facts in the chapter as a guide for later review. In addition, at the beginning of each chapter there is a list of objectives. They, like the highlights, are designed to alert students to the most important topics discussed in that chapter.

Eighth, many readers, both students and instructors, find constant references within the text of each chapter distracting if not actually annoying. Consequently, references have been used mainly for three purposes: first, to show the source of a quotation; second, to show the source or sources for statements that may seem controversial or dogmatic; and third, to show the source of material used in a box when this material comes from the work of one or several researchers. However, at the end of each chapter there is an extensive bibliography of studies, all of which have been used directly as sources for the subject matter of the chapter or indirectly to influence my point of view or my stated conclusions. As all of the studies have been used for one or both of these purposes, I want to acknowledge my indebtedness to the authors of the books or articles I have used as sources even if I have not quoted directly from their studies or given their points of view.

Ninth, to avoid extensive bibliographies that would confuse the reader about which books or articles could best be used as source material for further information about a particular topic, the bibliographies in this edition have been kept to approximately the same length as in the fourth edition. This was done by eliminating many of the older references unless they were used for one of the three purposes given in the preceding paragraph and by adding new references for the same subject areas. As most of the newer studies refer to the older studies in their introductory sections and in their bibliographies, readers who are interested in tracing the development of an area of research can easily do so through the newer studies.

At this time I wish to express my gratitude to my professional colleagues for their evaluations and criticisms of the fourth edition of this book, which have been invaluable in planning the fifth edition. I also want to say "Thank you very much" to those of my colleagues who read the manuscript for this edition and who provided so many helpful suggestions, most of which have been used.

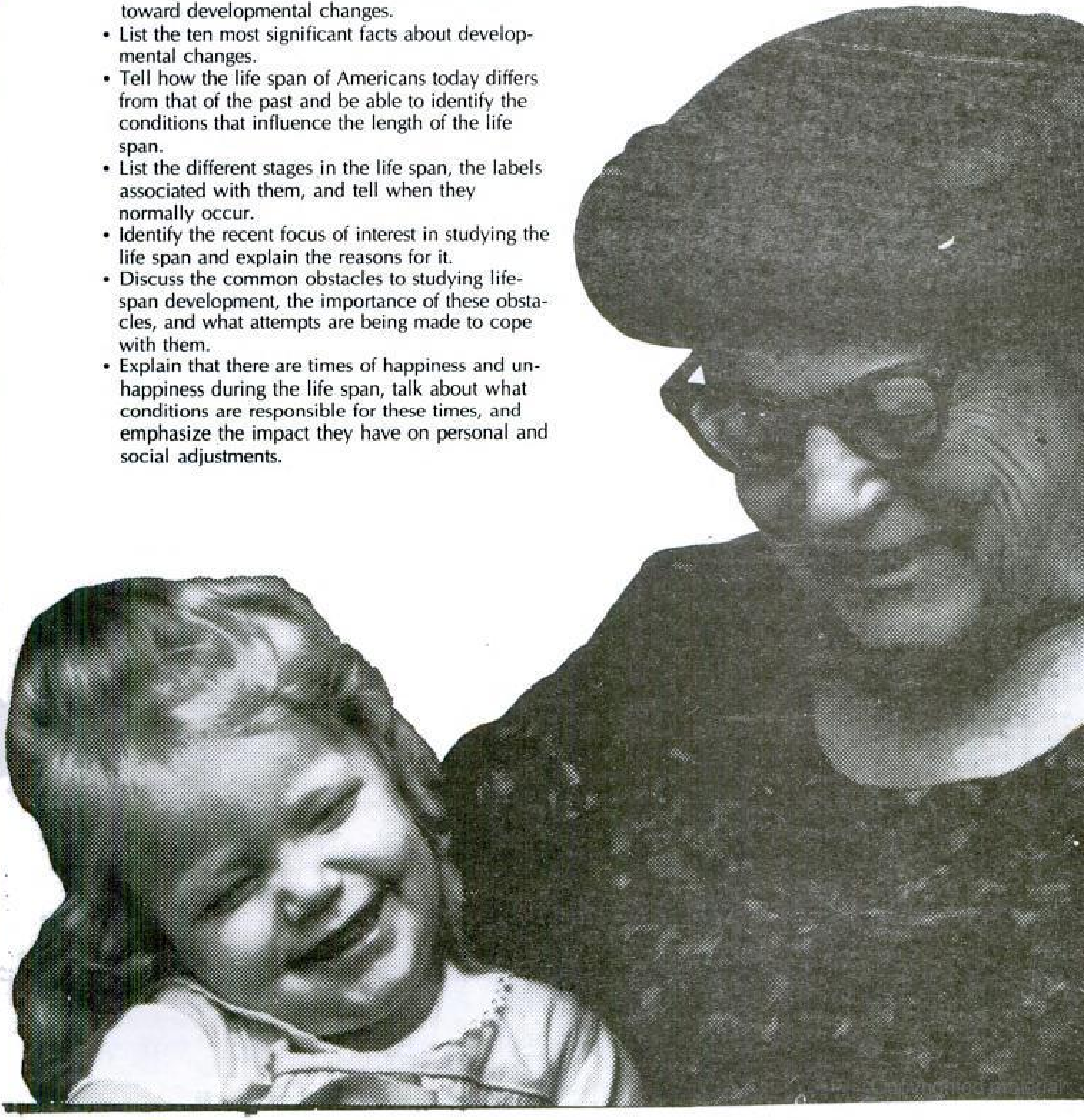
Elizabeth B. Hurlock

DEVELOPMENTAL PSYCHOLOGY
A Life-Span Approach

CHAPTER ONE
GROWTH AND DECLINE

After reading this chapter, you should be able to:

- Explain the meaning of developmental changes, their goal, and the incentives psychologists have to study them.
- Identify common personal and social attitudes toward developmental changes.
- List the ten most significant facts about developmental changes.
- Tell how the life span of Americans today differs from that of the past and be able to identify the conditions that influence the length of the life span.
- List the different stages in the life span, the labels associated with them, and tell when they normally occur.
- Identify the recent focus of interest in studying the life span and explain the reasons for it.
- Discuss the common obstacles to studying life-span development, the importance of these obstacles, and what attempts are being made to cope with them.
- Explain that there are times of happiness and unhappiness during the life span, talk about what conditions are responsible for these times, and emphasize the impact they have on personal and social adjustments.



Developmental psychology is the branch of psychology that studies intraindividual changes and interindividual changes within these intraindividual changes. Its task, as La Bouvie has pointed out, is "not only description but also explication of age-related changes in behavior in terms of antecedent-consequent relationships" (60).

Some developmental psychologists study developmental change covering the life span from conception to death. By so doing, they attempt to give a complete picture of growth and decline. Others cover only a segment of the life span—childhood, adulthood, or old age. In this book an attempt will be made to cover all segments and show the important developmental changes at different periods during the entire life span.

In the early years, as Siegel has explained, "developmental psychology was preoccupied with ages and stages. Investigators sought to learn the typical age at which various stages of development occurred" (104). The areas in which research was mainly concentrated were those considered significant for human evolutional adaptation. For the most part, research studies were concentrated on preschool and school-age children and on adolescents. Only later did research extend downward, first to birth and then to conception, and later upward, to adulthood, old age, and finally to middle age.

There are two major reasons for the uneven emphasis of developmental psychology. First, the study of a particular period in the developmental pattern has been greatly influenced by the desire to solve some practical problem or problems associated with that period. Research in the area of middle age, for example, is an outgrowth of the realization that good adjustments in the latter years of life depend on how well one has adjusted to the physical and psychological changes that normally occur in the middle years.

Because the focus of interest in developmental psychology has changed over the years, there are gaps in our knowledge of the different developmental phenomena characteristic of the different periods. These gaps are also due in part to difficulties in studying the different patterns of behavior characteristic of a given period, especially difficulties in getting representative samplings of subjects of a given age and in finding a suitable method for the study of behavior patterns.

The second reason for the uneven emphasis is that it is harder to study people at some stages of life than at others. Getting middle-aged and elderly subjects, for example, is far more difficult than getting preschool or school-age children or even adolescents.

Today, developmental psychologists have six major objectives: (1) to find out what are the common and characteristic age changes in appearance, in behavior, in interests, and in goals from one developmental period to another; (2) to find out when these changes occur; (3) to find out what causes them; (4) to find out how they influence behavior; (5) to find out whether they can or cannot be predicted; and (6) to find out whether they are individual or universal.

MEANING OF DEVELOPMENTAL CHANGES

The term *development* means a progressive series of changes that occur as a result of maturation and experience. As Van den Daele has pointed out, "development implies qualitative change" (114). This means that development does not consist merely of adding inches to one's height or of improving one's ability. Instead, it is a complex process of integrating many structures and functions.

Two essentially antagonistic processes in development take place simultaneously throughout life —*growth*, or evolution, and *atrophy*, or involution. Both begin at conception and end at death. In the early years growth predominates, even though atrophic changes occur as early as embryonic life. In the latter part of life, atrophy predominates, though growth does not stop; hair continues to grow, and cells continue to be replaced. With aging, some parts of the body and mind change more than others.

The human being is never static. From conception to death, change is constantly taking place in physical and psychological capacities. As Piaget has explained, structures are "far from being static and given from the start." Instead, a maturing organism undergoes continued and progressive changes in response to experiential conditions, and these result in a complex network of interaction (87).

Even though development is continuous, as Bower has pointed out, in the sense that it is a cyclic process with competences developing, then disappearing, only to appear at a later age, it is not continuous in the sense that it increases constantly but rather in a series of waves with whole segments of development reoccuring repetitively. For example, as Bower has explained, newborns walk, if held, and then this ability disappears only to reappear at eight or ten months of age. He goes on to explain that the "various explanations of repetitive processes in development thus seem to differ depending on the specific repetition to be explained. What all the explanations have in common, however, is that they preserve the assumption that psychologic growth, in spite of its apparent reversals, is a continuous and additive process" (13). When regression to an earlier stage occurs, there is usually a cause for it, as in the regression to awkwardness that occurs with the rapid growth at puberty.

Often the pattern of change resembles a bell-shaped curve, rising abruptly at the start and then flattening out during the middle years, only to decline slowly or abruptly in old age. It is important to recognize that at no time can this pattern be represented by a straight line, though plateau periods of short or long duration may occur in the development of different capacities.

Goal of Developmental Changes

The goal of developmental changes is to enable people to adapt to the environment in which they live. To achieve this goal, self-realization, or, as it is sometimes called, "self-actualization," is essential. However, this goal is never static. It may be considered an urge—the urge to do what one is fitted to do, the urge to become the person, both physically and psychologically, that one wants to be.

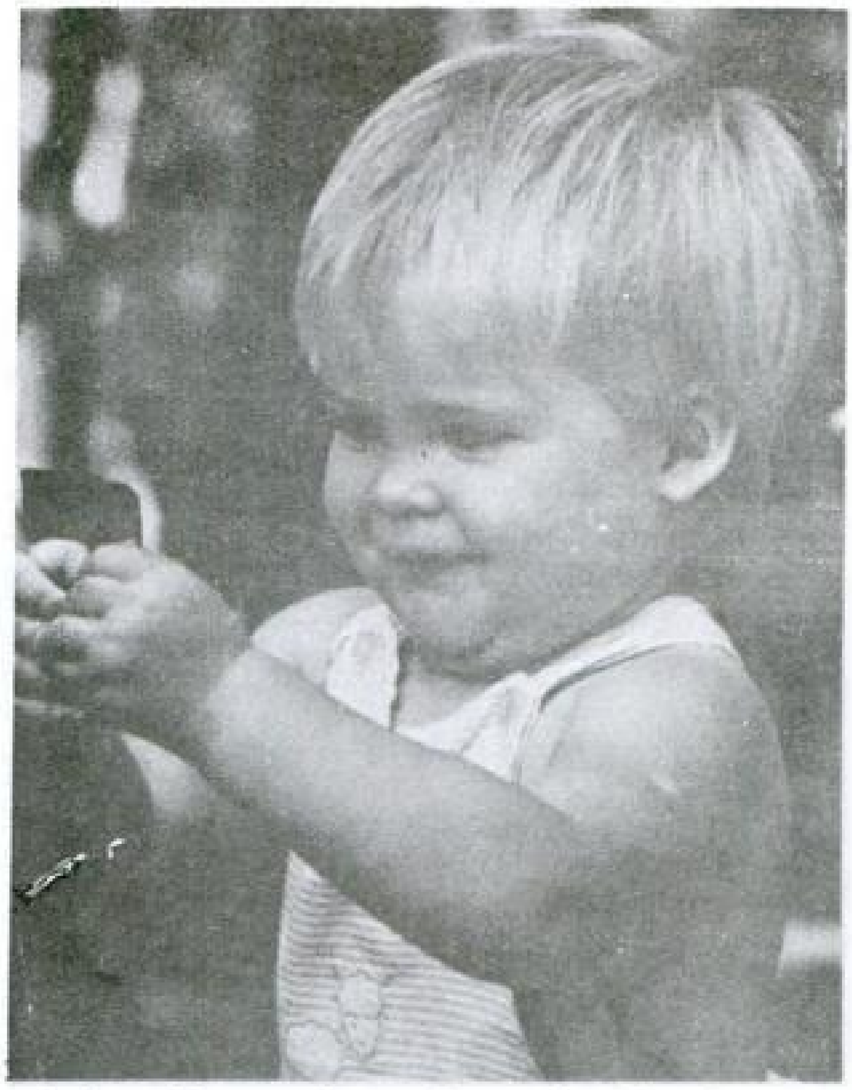
How people express this urge depends on the individual's innate abilities and training, not only during the early, formative years of childhood but also as he or she grows older and comes under greater pressures to conform to social expectations.

Because self-realization plays an important role in mental health, people who make good personal and social adjustments must have opportunities to express their interests and desires in ways that give them satisfaction but, at the same time, conform to accepted standards. Lack of these opportunities will result in frustrations and generally negative attitudes toward people and toward life in general.

Studies of Developmental Change

As already stated, studies of developmental changes during childhood and adolescence have been far more extensive than studies of changes that occur during the later years. Among the reasons for this uneven emphasis is the fact that the many prevailing traditional beliefs about children and adolescents have acted as a spur to researchers, who have set up studies designed to prove or disprove these beliefs. Traditional beliefs concerning the postadolescent years are less numerous, and have had less impact on the direction of research. Further, developmental changes occurring at middle age were regarded as purely physiological and, therefore, outside the scope of psychological research. Changes occurring in old age affected a relatively small percentage of the population and were thus considered less important than changes that occur during the early years. It is now recognized that changes occurring at any developmental stage are worthy of study.

One important incentive to research about developmental changes has been the nature-nurture controversy which has raged for decades. How important a role maturation based on genetic factors



Whether babies achieve the goal of development (self-actualization) depends partly on their innate abilities and partly on the training they receive during the early, formative years of life. (Photo by Erika Stone.)

plays in bringing about developmental changes as compared with environmental pressures and experiences has been the focal point of interest, and many research studies have been devoted to trying to find a satisfactory solution to this controversy.

A recent spur to research on developmental changes at all stages has been the emergence of a large number of new theories about the causes and effects of such changes. These theories are not always backed up by adequate evidence, and a great deal of research is motivated by the desire to substantiate or refute material that has widespread acceptance in the field (86). Any new theory can lead to controversy and experimentation, but of all theories, none have provided a more powerful incentive to research than Piaget's developmental theories, especially his theories about cognitive development (87). Other views that have inspired numerous studies are Kohlberg's stages of moral development and Gesell's stages of equilibrium and disequilibrium (99).

Attitudes toward Developmental Changes

Although changes of a physical or psychological nature are constantly taking place, many people are only vaguely aware of them unless they occur abruptly or markedly affect the pattern of their lives. The changes of old age, for example, usually occur at a much slower pace than those of childhood or adolescence. However, they still require readjustments on the part of all individuals. But, when individuals can make these adjustments relatively slowly, they themselves or others may not be conscious of them.

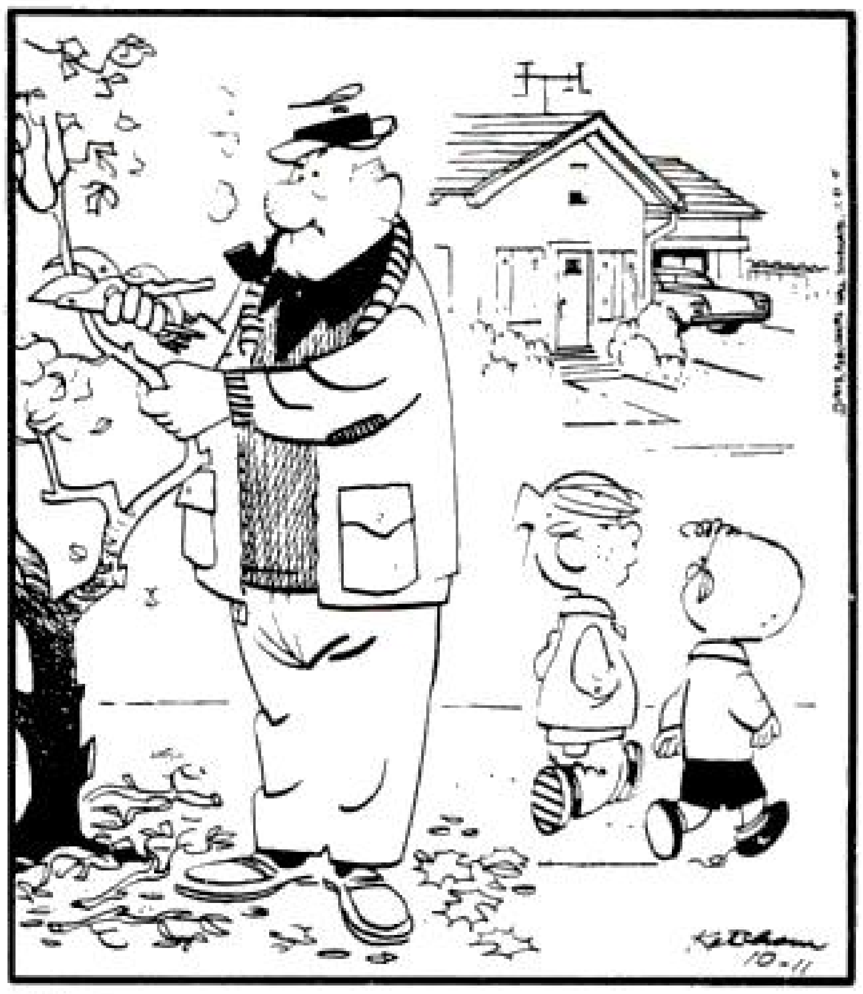
When changes are rapid, on the other hand, the individual is only too well aware of them, as are others. During the puberty growth spurt at the end of childhood and the beginning of adolescence, such comments as "My, how you have grown since I last saw you!" are evidence of how others notice these changes.

Likewise, in senescence, when the downward movement begins to accelerate, the elderly are aware of the fact that their health is "failing" and that their minds are "slipping." Constant readjustment to these changes is necessary in the scheduled pattern of their lives. They must slow down as the incapacities and infirmities of old age catch up with them and they must frequently forgo some of the activities that formerly played important roles in their lives.

There is a tendency for most people to regard the past as better than the present. And even though most children look forward to the day when they will be "teenagers," when that time comes they often long for the carefree days of their childhood. Similarly, many men who look forward to retirement wish, when the mandatory age for retirement arrives, that they could go back to earlier years when their usefulness and prestige were recognized by the social group (25,46,67,121).

When people become aware of the changes taking place in themselves, they develop definite attitudes toward these changes. Whether these attitudes will be favorable or unfavorable depends on a number of factors, the most important of which are described in Box 1-1. How many young children view developmental changes is illustrated in Figure 1-1.

FIGURE 1-1 How many young children view developmental changes. (Hank Ketcham. "Dennis the Menace." Publishers-Hall Syndicate, Oct. 11, 1973. Used by permission.)



"That's what growin' up means, Joey . . . ya just keep gettin' BIGGER and OLDER and BIGGER and OLDER. . . ."

BOX 1-1

FACTORS INFLUENCING ATTITUDES TOWARD DEVELOPMENTAL CHANGES

Appearance

Changes that improve one's appearance are welcome and lead to favorable attitudes while those that detract from one's appearance are resisted and every possible attempt is made to camouflage them.

Behavior

When behavior changes are disconcerting, as during puberty and senescence, they affect attitudes toward the changes unfavorably. The reverse is true when changes are favorable, as occurs, for example, when the helplessness of babyhood gradually gives way to the independence of childhood.

Cultural Stereotypes

From mass media, people learn cultural stereotypes associated with different ages and they use these stereotypes to judge people of those ages.

Cultural Values

Every culture has certain values associated with different ages. Because maximum productivity is associated with young through early middle-age adulthood in the American culture of today, attitudes toward this age group are more favorable than attitudes toward other ages.

Role Changes

Attitudes toward people of different ages are greatly influenced by the roles they play. When people change their roles to less favorable ones, as in the case of retirement or widowhood, social attitudes toward them are less sympathetic.

Personal Experiences

Personal experiences have a profound effect on an individual's attitude toward developmental changes. Since the authority and prestige of middle-aged executives decreases as they approach retirement, their attitudes toward aging are, for example, unfavorably affected. These attitudes are intensified by unfavorable social attitudes.

SIGNIFICANT FACTS ABOUT DEVELOPMENT

To understand the pattern of development, certain fundamental and predictable facts must be taken into consideration. Each of these facts has important implications, which are explained in the following pages.

Early Foundations Are Critical

The first significant fact about development is that early foundations are critical. Attitudes, habits, and patterns of behavior established during the early years determine to a large extent how successfully individuals will adjust to life as they grow older.

Because early foundations are likely to be persistent, it is important that they be of the kind that will lead to good personal and social adjustments as the individual grows older. As James warned many years ago, "Could the young but realize how quickly they will become mere walking bundles of habits, they would give more heed to their conduct while still in the plastic state" (47). Much the same point of view was expressed by Bijou: "Many child psychologists have said that the preschool years, from about two to five, are among the most important, if not *the* most important, of all the stages of development, and a functional analysis of that stage strongly points to the same conclusion. It is unquestionably the period during which the foundation is laid for the complex behavior structures that are built in a child's lifetime" (10).

White contends that the foundations laid during the first two years of life are the most critical. According to him, the origins of human competence are to be found in a critical period of time between eight and eighteen months. He goes on further to explain that the child's experiences during this time span do more to determine future competence than at any time before or after (117). Erikson claims that babyhood is the period when individuals learn general attitudes of trust or mistrust, depending on how parents gratify their child's needs for food, attention, and love. These attitudes, he maintains, remain more or less persistent throughout life and color the individual's perception of people and situations (35).

Early patterns do tend to persist, but they are not unchangeable. There are three conditions under which change is likely to occur. First, change may come about when the individual receives help and guidance in making the change. Some parents, for example, may succeed in training a child to use the right hand in preference to the left.

Second, change is likely to occur when significant people treat individuals in new and different ways. Children who have been trained to believe that they should be "seen but not heard" can be encouraged to express themselves more freely by a teacher who makes them feel that they have something to contribute to the group.

A third condition that can lead to change exists when there is a strong motivation on the part of individuals themselves to make the change. When behavior is rewarded by social approval, there is little motivation to make a change. When, on the other hand, behavior meets with social disapproval, there will be a strong motivation to change.

Knowing that early foundations tend to persist enables one to predict with a fair degree of accuracy what a child's future development is likely to be. A quiet, introverted child, for example, is not likely to develop into an extrovert, and a child who has little or no interest in school or school activities is not likely to develop into a scholar or a good school citizen.

Environmentalists believe that an optimum environment will result in maximum expression of genetic factors (1). However, it is difficult to provide an optimum environment during the preschool years when development is taking place especially rapidly.

Roles of Maturation and Learning in Development

The second significant fact about development is that maturation and learning play important roles in development. *Maturation* is the unfolding of the individual's inherent traits. In *phylogenetic functions*—functions which are common to the human race, such as creeping, sitting, and walking—development comes from maturation. Learning, in the form of training, is of little advantage, although controlling the environment to reduce opportunities for practice may retard development. Maturation provides the raw material for learning and determines the more general patterns and sequences of behavior.

Learning is development that comes from exercise and effort on the individual's part. In *ontogenetic functions*—those that are specific to the individual, such as writing, driving a car, or swimming—learning in the form of training is essential. Without it, development would not take place.

Three important facts emerge from our present knowledge of the interrelationship of maturation and learning as the cause of development. First, because human beings are capable of learning, variation is possible. Individual differences in personality, attitudes, interests, and patterns of behavior come not from maturation alone but from maturation *and* learning. Second, maturation sets limits beyond which development cannot progress, even with the most favorable learning methods and the strongest motivation on the part of the learner. Failure may result from either genetic or environmental adversities that reduce the genetic potentials for development. Third, there is a definite "timetable" for learning. The individual cannot learn until ready. "Developmental readiness," or readiness to learn, determines the moment when learning can and should take place. Harris has emphasized the importance of providing an opportunity to learn when the individual is ready: "It is possible, indeed likely, that a person who comes late to his training will never realize the full measure of his potential" (41).

Development Follows a Definite and Predictable Pattern

The third significant fact about development is that it follows a definite and predictable pattern. There are orderly patterns of physical, motor, speech, and intellectual development, for example. The pattern of physical and motor development is shown in Figure 1-2, which illustrates the laws of *developmental direction*—the "cephalocaudal law," which maintains that development spreads over the body from head to foot, and the "proximodistal law," which maintains that development spreads outward from the central axis of the body to the extremities.

Unless environmental conditions prevent it, development will follow a pattern similar for all. Babies creep and crawl, for example, before they walk, and interest in the opposite sex appears only when pubertal changes have taken place (28,106,122). There is no evidence that individuals have their own individual patterns of development, though there is evidence that the rate of development varies from individual to individual.

The importance of this is that it makes it possible to predict what people will do at a given age

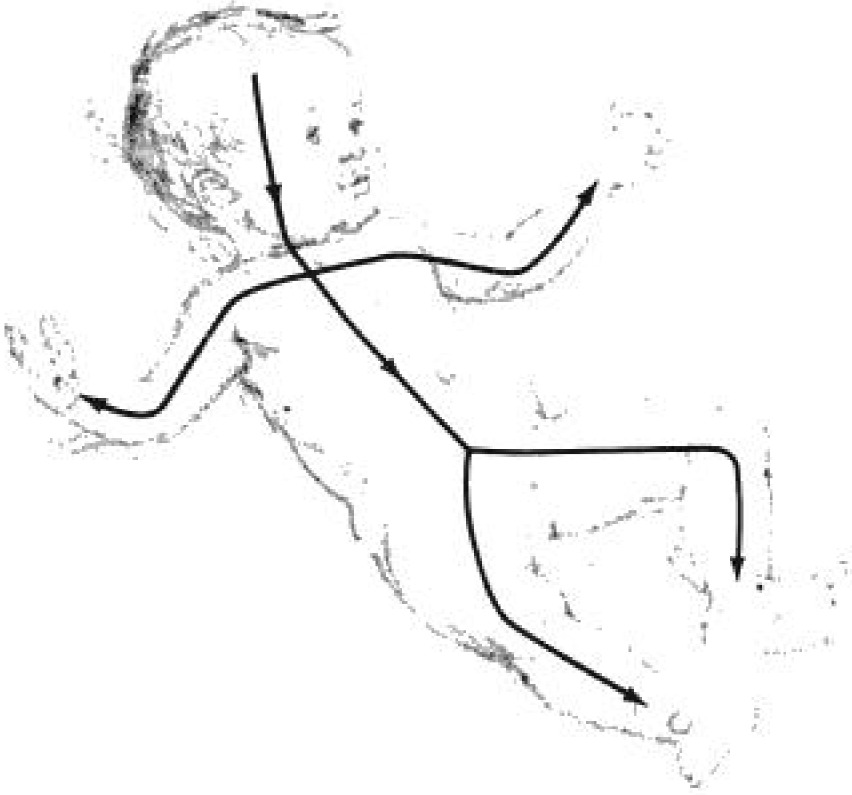


FIGURE 1-2 The pattern of physical and motor development follows the laws of developmental direction, which hold that development proceeds from head to foot and from trunk to extremities. (Adapted from E. L. Vincent and P. C. Martin. *Human psychological development*. New York: Ronald Press, 1961. Used by permission.)

and to plan their education and training to fit into this pattern. If development were not predictable, it would be impossible to plan ahead for any period in the life span. The middle-aged, for example, would not have the foresight to plan for failing health and reduced income as they grow older, and parents would not be able to plan for the training their children will need to fit into adult life.

All Individuals Are Different

The fourth siginificant fact about development is that all individuals are different. As Dobzhansky has emphasized, "Every person is indeed biologically and genetically different from every other," even in the case of identical twins (30). And there is evidence that differences increase rather than decrease as children go from childhood into adolescence and eventually to old age. Neugarten has pointed out that "Adults are not only much more complex than children but they are more different one from another, and increasingly different as they move from youth to extreme old age" (79).

As all individuals are different, no two people can be expected to react in the same manner to the same environmental stimuli. Timid children react differently than aggressive ones, and those who are placid and easygoing are not as upset by family moves as are those who are shy and sensitive.

Because no two individuals ever have identical hereditary endowments or the same environmental experiences, one can never predict with accuracy how people will react to a situation, even when there is ample information about their inherited abilities and even when it is known how the *average* person behaves in similar situations. Nor should one expect the same achievement from people of the same age and intellectual development. Children of the same mental age, for example, will not necessarily be ready to read or do other types of schoolwork at the same time. And, finally, individual differences are significant because they are responsible for individuality in personality makeup. Not only does individuality make people interesting, but it also makes social progress possible.

Each Phase of Development Has Characteristic Behavior

The fifth significant fact about development is that each phase of development has characteristic patterns of behavior. The patterns are marked by periods of *equilibrium*, when individuals adapt easily to environmental demands and, as a result, make good personal and social adjustments, and by periods of *disequilibrium*, when they experience difficulties in adaptation and, as a result, make poor personal and social adjustments.

While it is unquestionably true that some stages of growing up are marked by more difficult behavior than others, there is no stage when the characteristic behavior is not "problem behavior" if it is judged by adult standards. Only when an individual's behavior is atypical for a particular age and leads to poor adjustment may it justly be considered problem behavior. In most instances, such behavior is infantile in that it is characteristic of an earlier age level.

Many of these difficult, unsocial, and often hard-to-understand forms of behavior which appear at different times during the growing-up years will gradually wane and disappear, only to be replaced by other forms of behavior as difficult to understand and live with as the ones that have just been outgrown.

However, it is never safe to assume that all difficult behavior will disappear as the child grows older. Such behavior may be a warning of possible future trouble and should not be disregarded. When it persists beyond the age at which it is normally found, difficult behavior suggests that the individual's needs, both personal and social, are not being satisfactorily met.

Even more important, so-called "problem behavior" does not automatically disappear when children reach legal maturity. In fact, at every age during the adult years there are periods of equilibrium and disequilibrium, some of which are physical in origin and some of which are environmental or are carry-overs of behavior characteristic of earlier stages. The needless dependency and helplessness of some older people, for example, may readily be a carry-over of dependency developed during the earlier years of life. And the emotional disequilibrium some women experience during menopause may be a carry-over of childish ways of reacting to physical discomforts (102).

Each Phase of Development Has Hazards

The sixth significant fact about development is that each phase of development has its hazards. There is ample evidence that each period in the life span has associated with it certain developmental hazards—whether physical, psychological, or environmental in origin—and these inevitably involve adjustment problems. What these hazards are will be discussed in the chapters dealing with different stages in the developmental pattern.

It is essential that persons who are in charge of the training of children be aware of the hazards commonly associated with each period in the life span. Such awareness may make it possible to prevent or to at least alleviate these hazards. This is true also of the later years, especially middle and old age. It is important because the way in which people cope with these hazards has a great effect on their personal and social adjustments.

Development Is Aided by Stimulation

The seventh significant fact about development is that it is aided by stimulation. While most development will occur as a result of maturation and environmental experiences, much can be done to aid development so that it will reach its full potential. This can be done by stimulating development through directly encouraging the individual to use an ability which is in the process of developing. Stimulation, it has been found, is especially effective at the time when an ability is normally developing, though it is important at all times.

How important a role stimulation plays has been shown even in the case of children born prematurely. It has been found that if, instead of keeping these premature infants quiet and ignoring them except to take care of their physical needs—the usual procedure in American hospitals today—care-givers stimulate them by moving their limbs, turning them into different positions, and talking to them, the premature infants develop faster than unstimulated premature infants. Furthermore, the mortality rate is lower for these infants than for unstimulated premature babies (115). The educational television program "Sesame Street" has stimulated a great interest in reading in preschool children. As a result, children who watch this program regularly are learning to read sooner than nonviewers and, age for age, their reading ability is superior (76).

The more often parents talk to their preschool-age children, the sooner the children learn to talk and the stronger their motivation to do so (77). Similarly, stimulation of the muscles during the early years results in earlier and better coordinated motor skills.

Studies of the elderly have revealed that stimulation helps to ward off physical and mental decline. Those who remain physically and mentally active in old age show far less physical and mental deterioration than do those who adopt the "rocking-chair philosophy" of aging and become so inactive that their physical and mental capacities receive little or no stimulation.

Development Is Affected by Cultural Changes

The eighth significant fact about development is that it is affected by cultural changes. Because an individual's development is molded to conform to cultural standards and ideals, changes in these standards affect the developmental pattern. For example, in the past, standards for patterns of behavior for boys were distinctly different, in most respects, from those considered appropriate for girls. Parents and teachers knew they were expected to mold children's behavior to conform to the approved standards. Today, with some adults favoring the traditional sex roles and others the egalitarian sex roles, parents and teachers are often at a loss to know what cultural pattern to use as a standard.

When adults decide that a relaxed and pleasant life-style is more rewarding than just the accumulation of money, and when this cultural value wins the stamp of approval of the social group with which they are identified, this has a marked influence on the pattern of development of interests and behavior of their children throughout the children's lives (9,108). Children brought up in a one-parent home learn to conform to the culturally approved standard of behavior for such homes—standards that differ in many respects from those of two-parent homes (109).

Social Expectations for Every Stage of Development

The ninth significant fact about development is that there are social expectations for every stage of development. Every cultural group expects its members to master certain essential skills and acquire certain approved patterns of behavior at various ages during the life span. Havighurst has labeled them *developmental tasks*. According to him, a developmental task is "a task which arises at or about a certain period in the life of the individual, successful achievement of which leads to happiness and to success with later tasks, while failure leads to unhappiness and difficulty with later tasks." Some tasks arise mainly as a result of physical maturation, such as learning to walk; others develop primarily from the cultural pressures of society, such as learning to read; and still others grow out of the personal values and aspirations of the individual, such as choosing and preparing for a vocation. In most cases, however, developmental tasks arise from these three forces working together (43). The important developmental tasks for different phases in the life span as outlined by Havighurst are shown in Box 1-2.

Purposes of Developmental Tasks Developmental tasks serve three very useful purposes. First, they are guidelines that enable individuals to know what society expects of them at given ages. Parents, for example, can be guided in teaching their young children different skills by the knowledge that society expects the children to master these skills at certain ages and that their adjustments will be greatly influenced by how successfully they do so. Second, developmental tasks motivate individuals to do what the social group expects them to do at certain ages during their lives. And, finally, developmental tasks show individuals what lies ahead and what they will be expected to do when they reach their next stage of development.

Adjustment to a new situation is always difficult and is always accompanied by varying degrees of emotional tension. However, much of this difficulty and stress can be eliminated if individuals are cognizant of what will come next and gradually prepare for it. Children who absorb social skills needed for the new social life of adolescence will find adjustment to members of the opposite sex easier when they reach adolescence, and young adults will find transition into middle age easier and less stressful if they gradually cultivate leisure-time activities as their parental responsibilities lessen.

Hazards of Developmental Tasks Because developmental tasks play such an important role in setting guidelines for normal development, anything that interferes with their mastery may be regarded as a potential hazard. There are three very common potential hazards related to developmental tasks. The first is inappropriate expectations; either individuals themselves or the social group may expect the development of behavior that is impossible at the time because of physical or psychological limitations.

A second potential hazard is the bypassing of a stage of development as a result of failure to master the tasks for that stage of development. The crises individuals experience when they pass from one stage to another comprise the third common potential hazard arising from developmental tasks. Even though an individual may have mastered the developmental tasks for one stage satisfactorily, having to master a new set of tasks appropriate for the next stage inevitably brings with it tension and stress—conditions that can lead to a crisis. For example, men whose working lives have come to an end often experience a "retirement crisis," in which they feel that the prestige and personal satisfaction associated with the job have also come to an end.

Sooner or later all people become aware that they are expected to master certain developmental tasks at various periods during their lives. Each individual also becomes aware of being "early," "late," or "on time" with regard to these tasks. It is this awareness that affects their own attitudes and behavior as well as the attitudes of others toward them.

Although most people would like to master de-

BOX 1-2

HAVIGHURST'S DEVELOPMENTAL TASKS DURING THE LIFE SPAN

Babyhood and Early Childhood

- Learning to take solid foods
- Learning to walk
- Learning to talk
- Learning to control the elimination of body wastes
- Learning sex differences and sexual modesty
- Getting ready to read
- Learning to distinguish right and wrong and beginning to develop a conscience

Late Childhood

- Learning physical skills necessary for ordinary games
- Building a wholesome attitude toward oneself as a growing organism
- Learning to get along with age-mates
- Beginning to develop appropriate masculine or feminine social roles
- Developing fundamental skills in reading, writing, and calculating
- Developing concepts necessary for everyday living
- Developing a conscience, a sense of morality, and a scale of values
- Developing attitudes toward social groups and institutions
- Achieving personal independence

Adolescence

- Achieving new and more mature relations with age-mates of both sexes
- Achieving a masculine or feminine social role
- Accepting one's physique and using one's body effectively
- Desiring, accepting, and achieving socially responsible behavior
- Achieving emotional independence from parents and other adults
- Preparing for an economic career
- Preparing for marriage and family life
- Acquiring a set of values and an ethical system as a guide to behavior—developing an ideology

Early Adulthood

- Getting started in an occupation
- Selecting a mate
- Learning to live with a marriage partner
- Starting a family
- Rearing children
- Managing a home
- Taking on civic responsibility
- Finding a congenial social group

Middle Age

- Achieving adult civic and social responsibility
- Assisting teenage children to become responsible and happy adults
- Developing adult leisure-time activities
- Relating oneself to one's spouse as a person
- Accepting and adjusting to the physiological changes of middle age
- Reaching and maintaining satisfactory performance in one's occupational career
- Adjusting to aging parents

Old Age

- Adjusting to decreasing physical strength and health
- Adjusting to retirement and reduced income
- Adjusting to death of spouse
- Establishing an explicit affiliation with members of one's age group
- Establishing satisfactory physical living arrangements
- Adapting to social roles in a flexible way

velopmental tasks at the appropriate time, some are unable to do so, while others are ahead of schedule. Box 1-3 gives some of the most important factors that influence mastery of developmental tasks.

Regardless of the cause, there are two serious consequences of failure to master developmental tasks. One is that unfavorable social judgments are inevitable; members of the individual's peer group regard him or her as immature, a label which carries a stigma at any age. This leads to unfavorable self-judgments, which in turn lead to unfavorable concepts of self.

Another consequence is that the foundations for the mastery of later developmental tasks are inadequate. As a result, individuals continue to lag behind their peers, and this increases their feelings of inade-

BOX 1-3

FACTORS INFLUENCING MASTERY OF DEVELOPMENTAL TASKS

Handicaps to Mastery

- A retarded developmental level
- Lack of opportunity to learn the developmental tasks or lack of guidance in their mastery
- Lack of motivation
- Poor health
- Physical defects
- A low intellectual level

Aids to Mastery

- A normal or accelerated developmental level
- Opportunities to learn the developmental tasks and guidance in mastering them
- Motivation
- Good health and the absence of physical defects
- A high level of intelligence
- Creativity

quacy. Equally serious, they must try to master developmental tasks appropriate for the next stages of development at the same time that they are trying to complete the mastery of the tasks appropriate for the age level from which they have just emerged. Children who are unprepared to enter school will find that their attempts to catch up to their age-mates only intensify their feelings of inadequacy and reinforce judgments of their immaturity.

Traditional Beliefs about People of All Ages

The tenth significant fact about development is that there are traditional beliefs about people of all ages. These beliefs about physical and psychological characteristics affect the judgments of others as well as their self-evaluations (119). In our culture stereotypes relating to old age can lead to unfavorable treatment of people in the later years of their lives. Acceptance of these stereotypes by those who are growing old is responsible for much unhappiness during old age and also is an important factor in physical and mental decline.

In spite of the growing evidence from scientific studies that contradicts many of these stereotypes and traditional beliefs, the majority of them persist. It has been said that myths are slow to die and that many of them still have "plenty of bounce in them" (78). This is especially true of the traditional beliefs about sex differences and the cultural stereotypes of males and females at all ages (69). So long as they persist, they have a profound influence on the developmental pattern.

THE LIFE SPAN

There are two characteristics of the life span today that distinguish it from the pattern that existed several generations ago. First, the heavy preponderance of young people no longer exists. Instead, as more and more people live to be older, the proportions of individuals at different age levels becomes increasingly similar. It is estimated that, in time, the proportions will be approximately equal. Figure 1-3 shows the proportions of the population of different ages in 1970 and the estimated proportions in the year 2030.

The explanation for this change is that there are fewer children being born today than in the past, due to improved methods of contraception, and that better health and medical care enables more and

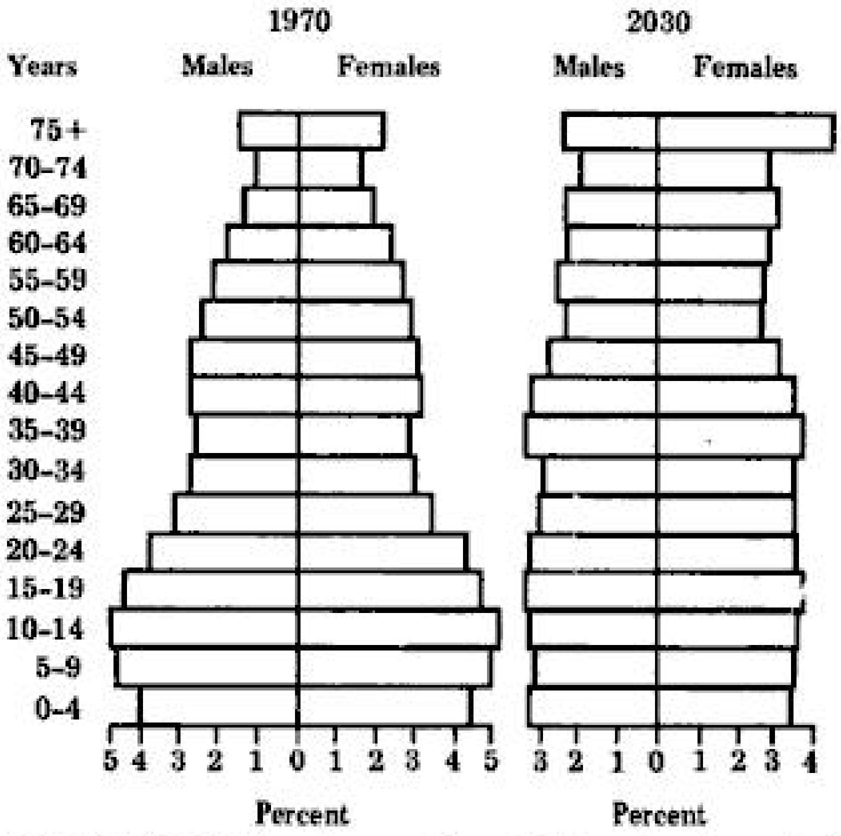


FIGURE 1-3 It has been estimated that, by the end of the present century, the number of Americans in each age level will be approximately equal. (Adapted from Bureau of the Census, National Center for Health Statistics, Washington, D.C., 1977. Used by permission.)

more people to live longer. There is, however, a difference between the sexes in number of people at every age level, with females outnumbering males, especially in the latter years of life (69).

The second characteristic of the life span is that American men and women, on the average, live longer than men and women of any other country and longer than men and women in the United States in past generations. In 1900, for example, the life expectancy for white males was 48.2 years; for white females, it was 51 years. By 1970, the life expectancy for white males had risen to 67.5 years, and for white females it has risen to 74.1 years. For blacks and other minority groups, the life expectancy for both males and females was several years less. It has been estimated that by 1990, 9.4 percent of the entire American population will be over sixty-five years of age (18,82,112).

Many factors influence the length of the life span; the most important of these are given in Box 1-4 (18,36,49,82,84,85,115).

It has never been possible to predict how long a given individual will live. This is just as true today as in the past. However, Scheinfeld has suggested that if three factors are taken into consideration, a general prediction is possible. According to him (96):

> *How long you, personally, may expect to live depends on these principal influences: First, environment—the way in which you were started off in life and the conditions under which you lived thereafter and live now. Second, your inherited vigor or weakness (as applied both to specific diseases and defects and to general resistance factors), with particular attention to your sex. And, third, luck.*

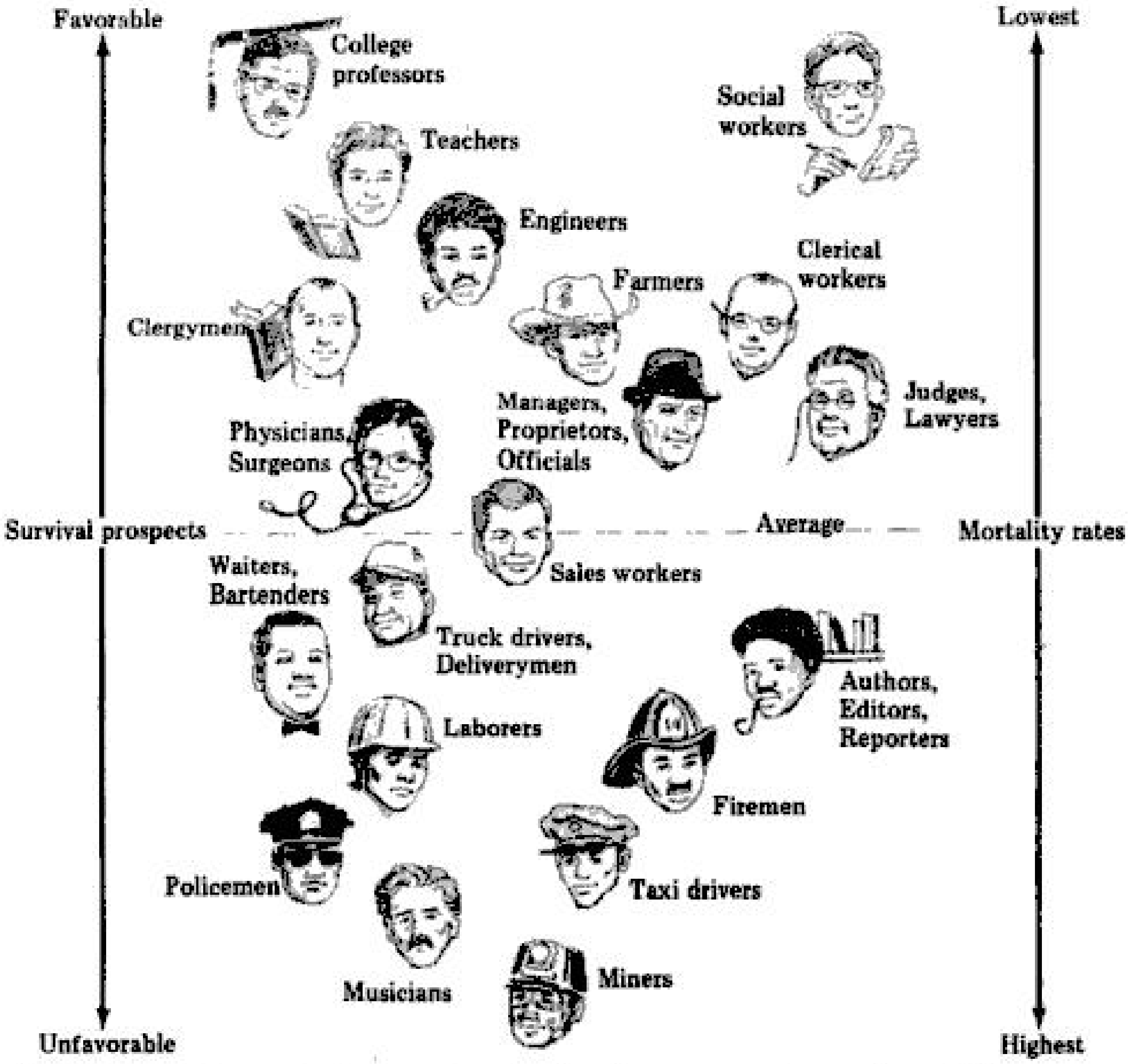


FIGURE 1-4 Longevity in America is related to occupation. (Adapted from A. Scheinfeld. *Your heredity and environment.* Philadelphia: Lippincott, 1965. Used by permission.)

BOX 1-4

CONDITIONS INFLUENCING LONGEVITY

- *Heredity.* Longevity tends to run in families.
- *Physical Characteristics.* People of average size and body structure tend to live longer than those who are under- or overweight or who are very tall or very short.
- *General Physical Condition.* A good physical condition throughout life, but especially during the growth years of childhood and adolescence, is favorable to longevity.
- *Sex.* Women, as a group, outlive men.
- *Race.* In America, blacks, Puerto Ricans, and other minority-group members have a shorter life expectancy than whites.
- *Geographic Location.* People who live in urban and suburban areas tend to live longer than those who live in rural areas as a result of better health and medical facilities.
- *Socioeconomic Level.* The higher the socioeconomic level, the longer the individual's life span tends to be.
- *Intelligence.* Individuals with high intelligence and those with intellectual interests live longer than the less intelligent.
- *Education.* People who are better educated tend to live longer than those whose education is limited.
- *Smoking and Drinking.* Nonsmokers and nondrinkers tend to live longer than those who smoke and drink excessively.
- *Marital Status.* Those who are or have been married live longer than those who have never been married.
- *Efficiency.* Those who are efficient tend to live longer than the inefficient because they expend less energy in whatever they do.
- *Anxiety.* The tendency to suffer from anxiety due to work, family, economic or other problems leads to hypertension which shortens the life span.
- *Occupation.* The kind of work the individual does affects the length of the life span. See Figure 1-4.
- *Happiness.* People who are reasonably happy and satisfied with the pattern of their lives normally live longer than those who are dissatisfied and unhappy.

Subdivisions of the Life Span

Regardless of how long or how short the total life span is, it is usually subdivided into stages or periods, each of which is characterized by certain behavioral or developmental characteristics. Chronological age (C. A.) is the criterion used for this subdivision. As Fry (37) has explained:

> *C. A. is only a rough index of biological, psychological, sociological, and cultural aging processes. Yet C. A. continues as the principle criterion for determining age categories on the part of bureaucratic organizations and in a wide variety of research. . . . Cultural age categories are determined on the basis of events in human society which in effect are "social clocks."*

Each individual goes through a succession of developmental stages, though at different rates and at slightly different ages (101). However, to quote Fry again, "Age is an index positioning individuals in a developmental sequence" (37).

All cultures divide the life span into periods, although different names are given to the periods and the age levels encompassed by the different stages vary. Even in the American culture there are variations. Erikson, for example, has subdivided the life span into eight stages with the following labels and basic components: *infancy*, the stage of trust versus mistrust; *early childhood*, autonomy versus shame and doubt; *preschool age*, initiative versus guilt; *school age*, industry versus inferiority; *adolescence*, identity versus identity confusion; *young adulthood*, intimacy versus isolation; *adulthood*, generativity versus stagnation; and *senescence*, ego integrity versus despair. As may be seen, Erikson contends that each stage has two possible resolutions, positive and negative. Failure at any stage adversely affects later stages (35).

Today it is customary to subdivide the life span into ten stages or periods, each with certain developmental and behavioral patterns. These are shown in Box 1-5. Not all individuals reach these stages at the same time and not all pass through all of them. Some people die or are killed before they complete the normal life span. But each stage has problems that must be solved before the individual can progress to the

BOX 1-5

STAGES IN THE LIFE SPAN

- *Prenatal period:* conception to birth
- *Infancy:* birth to the end of the second week
- *Babyhood:* end of the second week to end of the second year
- *Early childhood:* two to six years
- *Late childhood:* six to ten or twelve years
- *Puberty or preadolescence:* ten or twelve to thirteen or fourteen years
- *Adolescence:* thirteen or fourteen to eighteen years
- *Early adulthood:* eighteen to forty years
- *Middle age:* forty to sixty years
- *Old age or senescence:* sixty years to death

next stage. Failure to do so results in immaturity and poor adjustment (43,101). The remaining chapters of this book will discuss in detail the characteristic patterns of behavior for each of these age periods and the reasons for any deviations from the predictable patterns. They will also explain the meanings of the names applied to each of the major periods in the life span.

RECENT FOCUS OF INTEREST IN THE LIFE SPAN

To understand the pattern of development from conception to death, one must have a picture of this that is based on the results of scientific studies, not on traditional beliefs and stereotyped ideas. However, as was pointed out earlier, many obstacles confront the developmental psychologist in the study of the various stages in the life span, and as a result there are gaps in our knowledge. Today there is almost as much scientific interest in the later years of life as there is in the early years, but attempts to study the later years have been blocked, in part at least, by obstacles which are only now being minimized and in some instances eliminated.

Interest in the latter part of the life span is not of recent origin. Hippocrates treated illnesses of old age, and there are also historic references to beauty aids for the elderly and to attempts at rejuvenation (63). However, until the turn of the present century too few people lived long enough to make the latter part of life a serious problem. Now an increasing percentage of the population lives longer, and this has created many problems for the individuals themselves and for their families, their employers, and society in general.

As a result, two new areas of scientific research have been developed—gerontology and geriatrics. *Gerontology* is the science of aging. It is derived from the Greek *geron*, meaning "old man," and *ology*, meaning "the study of," and it is concerned with all facets of aging. *Geriatrics*, on the other hand, is that branch of medicine concerned with the diseases of old age. It deals with the health of the aged, just as pediatrics deals with the health of infants and children.

The major goal of studies in the area of gerontology is to gather data to disprove traditional beliefs about the aged and to show how they can function successfully in a youth-oriented culture.

To prolong the usefulness and happiness of old people through better health has been the goal of geriatrics. While improvement in the health of old people may and often does add years to their life span, this is of little value unless individuals are able to enjoy and make use of this added time not only for their own enjoyment but also to aid society. The goal of geriatrics is therefore to add life to the years of the elderly, not just years to their lives.

Middle age, until recently one of the least explored periods in the life span, has now come under scientific investigation.

The reason for this is that few problems related to middle age seemed important enough to engage the attention of the psychologist, who was already preoccupied with studies relating to children, adolescents, young adults, and old people.

Not only has there been increasing scientific interest in the latter years of life, but there is also a strong popular interest in the subject, as evidenced by the appearance of many books and articles dealing with the problems of middle and old age.

OBSTACLES IN STUDYING LIFE-SPAN DEVELOPMENT

All studies of the life span are beset by obstacles in varying degrees. The five most common and most serious of these are discussed below.

It is difficult to obtain a large, representative sample of subjects during old age when experimenters have to use, for the most part, those living in institutions—people who, unquestionably, are not representative of the general population. (Photo by Ray Ellis/Photo Researchers.)

Representative Samples of Subjects

The first obstacle scientists encounter in studying development during the life span is securing representative samples of subjects at different age levels, although it is relatively easy to get representative samplings of subjects from among schoolchildren and college students. In the case of newborn infants, however, researchers often meet with strong parental objections. Getting older adolescents and young adults who are not attending school to volunteer as subjects is also difficult because they may not be available for study at any one particular place.

This difficulty increases with advancing age, which is why so many of the studies relating to the latter years of life have been made on men and women living in institutions, people who unquestionably are not representative of the general population.

Recruiting young adults, middle-aged adults, or the elderly as voluntary participants in experiments has likewise been a difficult task, even when they are paid for their time. Many persons shy away from any testing program, partly because of lack of personal interest but mainly because they are afraid they will not do well and, as a result, create an unfavorable impression. Relying on those who are willing to participate may be creating a bias just as using institutional cases does.

Establishing Rapport with Subjects

The second obstacle scientists encounter in studying development during the life span is establishing rapport with subjects at different age levels. There is no guarantee that scientists will be able to elicit the information they are seeking from any group unless they are able to establish rapport with their subjects. Therefore, there is no guarantee that the data they obtain is as accurate or as comprehensive as it might have been had a better relationship existed between subjects and experimenters.

The reason for this is that obtaining information from subjects of any age is extremely difficult because most people resent having a stranger pry into their personal affairs. Even schoolchildren and college students, who often take tests or fill out questionnaires as part of their classroom work, show their resentment by being uncooperative or even by falsifying the information they give. This is even truer of adults of all ages. Their resentment at participating in a scientific study may be partially overcome if they are paid to do so, but they tend to regard the experimenter as an invasion of privacy (91,92).

As a result, it is questionable whether data obtained from many studies is a true picture of the involved individuals' attitudes, feelings, and values. Only when good rapport can be established with the subjects and when there is evidence of cooperation on their part can great confidence be placed in the results of these studies (91,92).

Methodology

The third obstacle scientists encounter in studying development during the life span is securing a satisfactory method. This is because no one method can be used satisfactorily for studying people at all ages or for investigating all areas of development. Some of the methods that must be resorted to, for lack of better ones, are of dubious scientific value.

Because of the wide age range of subjects and the variety of different areas of development that must be studied to give a composite picture, assorted methods have had to be used. Some have been borrowed from medicine, from the physical sciences, and from related social sciences, especially anthropology and sociology. Some have made use of laboratory settings, and others of the naturalistic settings of the home, school, community, or work environment. Some are regarded as reliable, while others, especially the retrospective and introspective techniques, are of questionable value.

Regardless of the method used, most of the studies have been cross-sectional comparisons of the same abilities at different stages of development. As such, they do not give evidence about developmental trends or about intraindividual variability. Nor is it possible, when using cross-sectional comparisons, to assess the relative behavior constellations of individuals at an early age and similar behavior in adult life.

One of the most serious problems connected with the cross-sectional approach is that it is almost impossible to get comparable groups of subjects for study at different age levels. This can bias the result of studies, especially studies of old age. When mental abilities are studied using the cross-sectional approach, mental decline is reported to be far greater than when the same mental abilities are studied using the longitudinal approach. This, in turn, has given scientific backing to the popular belief that mental decline in old age is not only great but also universal.

Another serious problem associated with the cross-sectional approach is that it does not take into consideration cultural changes which always play a major role in the patterns of physical and mental development. This results in a tendency to interpret any change that may appear as an age change (34,52).

Cultural changes affect values, among other things. A comparison of adolescents of today with members of the older generation showed that the latter tend to disapprove more strongly of extravagance than adolescents do. This might be interpreted to mean that members of the older generation have become rigid with age. In reality, the difference is one of cultural values. When members of the older generation were growing up, high value was placed on a prudent spending of money and on having a nest egg for the proverbial rainy day. Today, adolescents are growing up in a culture dominated by the philosophy of "keeping up with the Joneses" and of "letting Uncle Sam take care of you when you can't take care of yourself" (59). Because of the rapid change in cultural values taking place at the present time, children often consider their parents' values old-fashioned. See Figure 1-5.

Accuracy of Data Obtained

The fourth obstacle scientists encounter in studying development during the life span is ensuring that the data obtained from the studies will be accurate. Inaccuracies may result when a biased sampling of subjects gives a false picture of the normal developmental pattern at a particular age. This can happen, for example, when institutionalized elderly people are used for the study and the subjects try to present as favorable a picture of themselves as they can and, either consciously or unconsciously, distort their introspective or retrospective reports. It can also occur when the only method available for studying a certain area of development is less than satisfactory.

In the measurement of intelligence it is still questionable if the results are accurate for the first two years of life (65). There is even controversy about the accuracy of intelligence tests for older age levels (27).

FIGURE 1-5 Rapid changes in cultural values make many parental values seem "old-fashioned" to their children. (M. O. Lichty. "Grin and Bear It." Publishers-Hall Syndicate, Nov. 17, 1965. Used by permission.)

"I'm glad we had this man-to-man talk, Pop . . . Some of your ideas were pretty old-fashioned!"

Observational techniques for the study of behavior during the preschool years are questioned for accuracy because of the tendency of observers to draw inferences from their study of children's behavior and speech (40).

Studying well-being, life satisfaction, or happiness is very difficult because only subjective measures can be used. The accuracy of such measures is open to question (22). In the study of fears by means of oral or written checklists, it was found that subjects often do not identify fear as different from anxiety or worry. Furthermore, when parents report their children's fears, they often describe different fears than their children do. In addition, it is impossible to identify the intensity of fears using only a checklist (26).

Even though the longitudinal approach has a methodological advantage over the cross-sectional approach, the problem of accuracy is still ever present. Unless such studies are started when the subjects are very young, information about their earlier lives must be supplied by the subjects themselves or by parents, teachers, and peers, who tend to interpret the data they report in terms of their own attitudes and experiences.

Ethical Aspects of Research

The fifth obstacle scientists encounter in studying development during the life span involves the ethical aspects of research. Today there is a growing trend to take this into account, and it has been a stumbling block to certain kinds of studies, which, in the past, were made without consideration of their fairness to the subjects studied. With the trend nowadays toward considering the rights of subjects, emphasis in being placed on asking their consent to participate in experiments, or, for the very young, the consent of their parents or guardians (15,61). Such consideration also applies to high school and college students; they no longer are expected to take time from their studies to participate in experiments *unless* they are paid to do so. Thus there is a tendency to bias the sampling because only those who need the money or those who feel that the money is worth their while are willing to accommodate the researcher.

Consideration of the rights of subjects is therefore bound to lead to gaps in present-day knowledge of development. Aside from preschool and school-age children, no other group of individuals has been taken greater advantage of by scientific researchers than the institutionalized elderly. Just as preschool and school-age children formerly were not consulted about their willingness to participate in an experiment, so the wishes of the institutionalized elderly were ignored. They were expected to take tests or answer questions, regardless of how they felt about the matter, because they were receiving public assistance. Even in privately supported institutions the inmates were not always consulted.

Such procedures are now regarded as an invasion of privacy and as ethically questionable. As a result, many experimenters are taking into consideration the wishes of those they try to recruit as subjects (89). They are also taking a new attitude toward institutionalized middle-aged people, recognizing their rights to participate or refuse to participate in any research study (12). While these new attitudes toward ethical standards have resulted in fairer treatment of institutionalized middle-aged and older people, they have made it more difficult to get subjects for scientific research among the older age groups.

RESULTS OF OBSTACLES IN STUDYING DEVELOPMENT

The obstacles discussed above have resulted in a paucity of evidence about some areas of development. Of all of the obstacles, the problem of finding a suitable method is probably the most serious. Because of this, relatively few studies of humor at different ages have been made (19). Similarly, few studies of the effects of names and clothes on self-judgments of individuals as well as judgments of individuals by others have been made and, until recently, few of life satisfaction or happiness at different ages during the life span. This leaves gaps in our knowledge of important areas of development at different ages.

This has two serious consequences. First, it tends to lead to a distortion of the picture we have of normal development. For example, lack of adequate evidence about the learning capacities of newborns and about their sensory development encourages acceptance of the traditional belief that they are completely helpless. In time, new evidence may show that newborn infants are less helpless than they appear or than has been formerly accepted as a fact.

Second, lack of adequate information leads to the continued acceptance of traditional beliefs, especially those related to old age. People are conditioned to think unfavorably about this phase of life because of the traditional beliefs associated with it. This affects not only the personal and social adjustments older people make but also the treatment they receive from the social group.

Attempts to Cope with Obstacles

Because of the serious and widespread effects of the obstacles to studying developmental changes, many attempts have been made, with varying degrees of success, to cope with these obstacles. For example, whenever possible animal subjects are being replaced by human subjects for research studies (68). To obtain more representative samplings of subjects at different age levels, especially in the case of middle-aged and old subjects and in the case of the newborn, cooperation has been encouraged by offering guidance and counseling in exchange for participation in research.

To increase the accuracy of the data obtained, research studies are made in naturalistic settings (such as the home, school, or community) whenever possible, rather than in laboratories. Moving pictures and other measuring devices have been substituted for observations by experimenters (80). Even more important, laboratories have been established to train experimenters in observation and in handling children and subjects of other age levels in experimental settings (72, 73, 91, 92). For example, the following suggestions have been made for interviewing children: don't talk down to them or be condescending but treat them as adults; make them feel their answers are important; create a relaxed atmosphere by getting down to their level, relaxing, and putting the children at ease; have patience and allow ample time for response; and explain that other children in the neighborhood and/or over the country are also participating (4).

The problem of methodology is still a thorny one and has been met with only limited success. To date, no satisfactory test has been devised to measure the intellectual development of very young children, and there is growing criticism also of the tests available for the older age levels (27). This obstacle has not yet been successfully dealt with. Because different investigators get different and often conflicting results in their studies, it has been suggested that this obstacle can be overcome by collaboration and coordination of results (8).

A growing number of studies using the longitudinal rather than the cross-sectional approach have been appearing. Some of these cover only small segments of the life span, while others cover large segments. However, they give a picture of developmental changes over a span of years, and when they are combined with other studies covering other age spans, the composite result serves to give a fairly accurate picture of the normal pattern of development. Bijou has commented on how much confidence one can have in the results of these studies (10):

> *Confidence can be expected to remain high, if after a reasonable period the productions clearly advance basic knowledge of the historical-developmental component of psychological events in the form of the concepts and principles they generate and if they establish new guidelines to applied problems in the form of demonstrated empirical relationships. On the other hand, confidence can be expected to wane, if the field continues to yield products which are peripheral to general psychological theory and offers solutions which turn out to be fads, gimmicks, and verbal prescriptions with only captivating face validities.*

By contrast, Skinner (105) has taken a rather dim view about the progress developmental psychologists have made to date. He says:

> *Why has it been so difficult to be scientific about human behavior? Why have methods that have been so prodigiously successful almost everywhere else failed so ignominiously in this one field? Is it because human behavior presents unusual obstacles to a science? No doubt it does, but I think we are beginning to see how these obstacles may be overcome.*

HAPPINESS AND UNHAPPINESS DURING THE LIFE SPAN

Life satisfaction, usually referred to as "happiness," comes from the fulfillment of a need or wish and, as such, is the cause or means of enjoyment. As Alston and Dudley have explained, "Life satisfaction is the ability to enjoy one's experiences, accompanied by a degree of excitement" (3).

According to the definitions of *happiness* given in any standard dictionary, it is a state of well-being and contentment—a pleasurable satisfaction that comes when the individual's needs and wishes are fulfilled. It is not the same as *euphoria,* which implies not only a state of satisfaction but also a buoyancy that is not present in life satisfaction or happiness as it is not only popularly defined but also used by many psychologists. Because happiness is a synonym for life satisfaction and because it is far more widely used than life satisfaction, it will be used throughout this text to imply satisfaction resulting from the fulfillment of needs and wishes.

Because happiness and unhappiness or life satisfactions and dissatisfactions are subjective states, information about them must, of necessity, come from introspections or retrospections or from answers to questionnaires. This is because only the persons involved can say whether they are happy or unhappy or whether they are satisfied or dissatisfied with their lives.

Introspective and retrospective reports, as all psychologists are well aware, are not always accurate. Retrospective reports are especially subject to error because people tend to forget, or to minimize, especially in retrospect, the unhappiness they experienced in some periods of their lives and to exaggerate the unhappiness or the happiness at other periods. In filling out a questionnaire, there is a tendency to give an answer that will put the subject in a favorable light, regardless of the accuracy of the answer.

Because of the many difficulties involved in making long-term longitudinal studies, as was previously pointed out, most studies of happiness and life satisfaction have been made through the use of the cross-sectional approach. The few that have used the longitudinal approach have covered only relatively short periods of the life span, mainly the years of early adulthood and of old age.

Significant Facts about Happiness

Inadequate as are the methods available to date to study happiness, they do give clues to what contributes to the individual's life satisfactions. They also indicate what leads to happiness or unhappiness, not only for different people but also within the same person at different age levels, and what are most likely to be the happy and the unhappy periods in the life span. The results of these studies are summarized below.

Essentials of Happiness There are essentials to happiness, or the state of well-being, contentment, and satisfaction. They are acceptance, affection, and achievement, often called the "three *A*'s of happiness." These are illustrated in Figure 1-6. As Shaver and Freedman have pointed out, "Happiness is more a matter of how you regard your circumstances than of what the circumstances are. . . . It comes from tending one's own garden instead of coveting one's neighbor's" (100).

Acceptance by others is affected by self-acceptance which comes from good personal as well as social adjustments. Shaver and Freedman have further commented, "Happiness has a lot to do with accepting and enjoying what one is and what one has, maintaining a balance between expectations and achievements" (100).

One important contributor to acceptance by others is physical attractiveness. It also affects self-acceptance, achievements, and the affection a person receives from others. Mathes and Kahn have explained (70):

> *In social exchange physical attractiveness is a positive input and can be used to obtain a variety of good outcomes for the possessor. One of the most frequently obtained outcomes is liking. Attractive people are liked most as friends, dates, sex partners and spouses. Attractive people receive more positive evaluations from others and empathy than unattractive people. Other good outcomes obtained by attractive people include more work from subordinates, greater attitude agreement, better grades, and higher-status spouses. As a result of the many good outcomes obtained by attractive people, it seems likely that they are happier and better adjusted than unattractive people. It is also probable that the liking received from others is reflected in a higher self-esteem.*

Affection is a normal accompaniment of acceptance by others. The better accepted people are, the more they can count on the affection of others. That affection is essential to good personal adjustments has been shown in the many studies of emotional deprivation and the devastating effects it has on the individual. These effects, unfortunately, do not always end with childhood. Instead, they are often persistent. As Horn has said, "Someone who experiences a shortage of love in childhood is unhappy then and also develops values that perpetuate unhappiness in later life" (45).

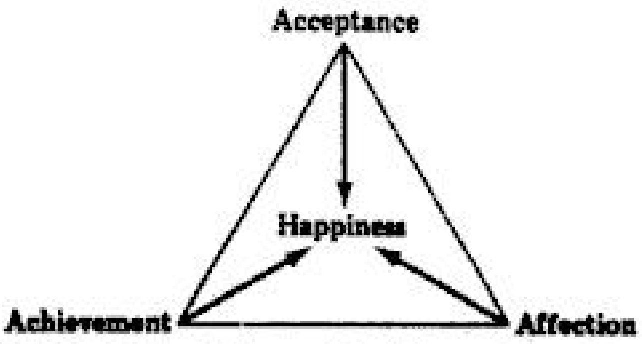


FIGURE 1-6 The "three A's of happiness."

The third *A* of happiness, *achievement*, relates to reaching a goal one sets for oneself. If this goal is unrealistically high, the result will be failure and the individual will then be dissatisfied and, consequently, unhappy. Then, too, objective success does not necessarily mean subjective success or that the individual who appears to be successful is so. Hard work, competence, and personal sacrifice may achieve money and power, but an executive, with many status symbols, is not necessarily a happy person. Success often reduces chances for individuality and satisfaction of personal needs and desires. Furthermore, an executive may be admired and respected but not loved and may even be feared (81). Achievement without affection will lead to self-dissatisfaction, and this, in turn, will color the individual's outlook on life.

Relative Happiness It is doubtful that such a state as 100 percent happiness or satisfaction or 100 percent unhappiness or dissatisfaction exists. Happiness and satisfaction are relative. At every age level, and at all times during each age level, there are times of happiness and satisfaction and times of unhappiness and dissatisfaction.

If pleasant experiences outweigh the unpleasant, individuals will be satisfied and regard themselves as happy; if unpleasant experiences outweigh the pleasant, they will be dissatisfied and consider themselves unhappy.

Happiness Varies at Different Times in the Life Span Retrospections covering the whole life span or large segments of it reveal the degree of happiness at different ages. Many adults remember puberty and early adolescence as so unhappy that they claim they would not want to return to childhood even if they could. In a study reported by Meltzer and Ludwig, even the adult years were found to vary in degree of happiness, with the subjects describing the years before middle age as happier than those after middle age (75). This is shown in Figure 1-7.

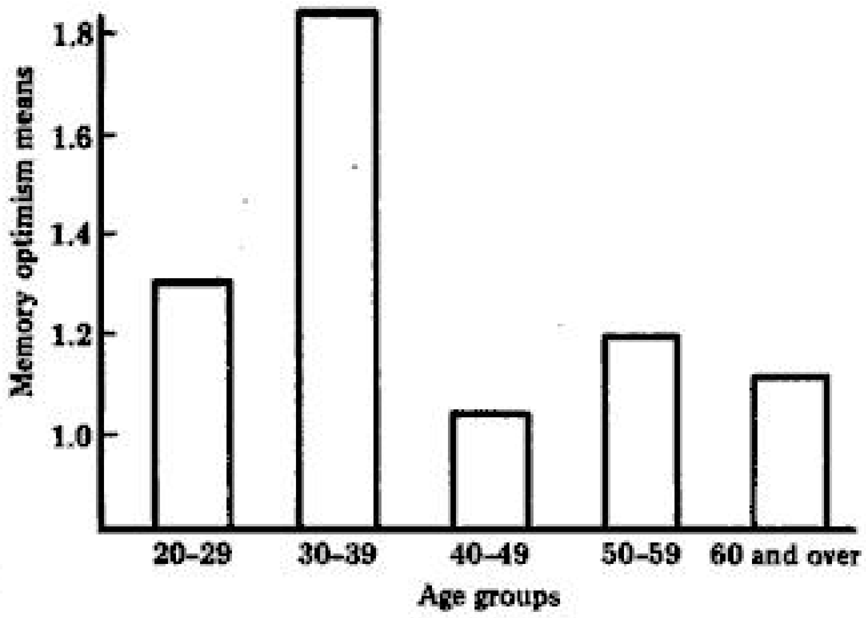


FIGURE 1-7 Age differences in memory optimism, or pleasant memories. (Adapted from H. Meltzer and D. Ludwig. Age differences in memory optimism and pessimism in workers. *Journal of Genetic Psychology,* 1967, **110,** 17–30. Used by permission.)

Happiness at One Age Does Not Guarantee Happiness at Other Ages There is no evidence that once happy always happy, or that once unhappy always unhappy. Happiness and satisfaction at one age may be followed by unhappiness and frustration at the next stage of development and vice versa.

Whether happiness or unhappiness will persist depends to a large extent on how successfully individuals adjust to the new roles and social expectations of each phase in the life span and how their environments enable them to satisfy their needs and desires, especially those for acceptance, affection, and achievement. It is not unusual for a happy child to become a frustrated and unhappy adult or for an unhappy child to develop into a satisfied and relatively happy adult.

At Every Age There Are Sex Differences in Happiness During childhood and adolescence, girls as a group tend to be happier than boys. One of the most important reasons for this is that girls get their greatest satisfaction from interpersonal relationships while boys' greatest satisfaction comes from achievement (39).

During the early years of adulthood, women tend to be happier than men, especially if they are married and feel useful as mothers and wives. Young men, by contrast, tend to be less happy because they are often not able to achieve the success in their occupations that they had hoped for. After forty, the reverse is true for many women, especially those whose role has been that of homemaker. By contrast, many men become happier and better satisfied with their lives after forty because they feel more successful in their careers than they were when they were younger. Then there is a shift in life satisfactions after sixty or sixty-five. Men rebel against feeling useless while many women feel more useful, either in taking care of retired or ailing husbands or helping with the care of grandchildren (3,107).

At Every Age There Are Obstacles to Happiness Some obstacles to happiness are subjective and some are environmental. Poor health, mental limitations, and unrealistic aspirations are the most common subjective obstacles. It is difficult for people of any age to be satisfied with their lives if they feel they are failures, even if others regard them as successful. Likewise, it is difficult for people to be satisfied with the pattern of their lives if poor health prevents them from doing what they want to do or what their peers are doing.

There may also be environmental obstacles to life satisfactions at any age. For example, children who grow up in a neighborhood where they are discriminated against because of race, religion, socioeconomic status, or any other reason will lack social acceptance, affection from peers, and opportunities to achieve successes in peer-prized activities. Their unhappiness may affect their performance in school and thus jeopardize their chances for success in later life.

Many Factors Influence Happiness At every period in the life span, happiness is influenced by a number of factors. This is in part responsible for the variation in happiness at different ages and also for the fact, discussed above, that happiness at one age does not necessarily guarantee happiness at other ages. The most common and important of the factors are given and briefly explained in Box 1-6.

The relative importance of these factors depends on the individual and the individual's age. Meltzer and Ludwig reported that happiness at different periods in the adult years was remembered as being due to family, marriage, good health, and achievements, while unhappiness was associated with illness, physical injuries, death of a loved one, unsuccessful work experiences, and failure to reach goals (75).

BOX 1-6

FACTORS INFLUENCING HAPPINESS

Health
Good health enables people at all ages to do what they want to do, while poor health or a physical disability is an obstacle to the satisfaction of their wants and needs and, as such, affects their happiness unfavorably.

Physical Attractiveness
Physical attractiveness contributes to social acceptance and affection and often leads to greater achievements than would be possible if the individual were less attractive.

Degree of Autonomy
The greater the autonomy people can achieve, the greater their chances for happiness. This is as true of early childhood as it is of the adult years.

Interactional Opportunities Outside the Family
Because of the high social value placed on popularity, people at all ages are happier if they have opportunities for social contacts with outsiders than if their social contacts are limited to family members.

Type of Work
The more routine the work and the fewer opportunities for autonomy in it, the less satisfying it will be. This is just as true of chores assigned to children as work in the adult years.

Work Status
Whether in school or in a job, the more successful the person is in the work being done and the more prestige there is associated with it, the greater the satisfaction.

Living Conditions
When the pattern of living enables the person to have interactions with others, either in the family or with friends and neighbors in the community, it adds greatly to life satisfactions.

Material Possessions
It is not material possessions, per se, that influence happiness but the way people feel about them. This is illustrated in Figure 1-8.

Balance between Expectations and Achievements
If expectations are realistic the person will be satisfied and happy when the goal has been reached.

Emotional Adjustment
Well-adjusted, happy people express negative emotions, such as fear, anger, and jealousy, less often and with less intensity—and with more focus and direction—than do those who are poorly adjusted and unhappy.

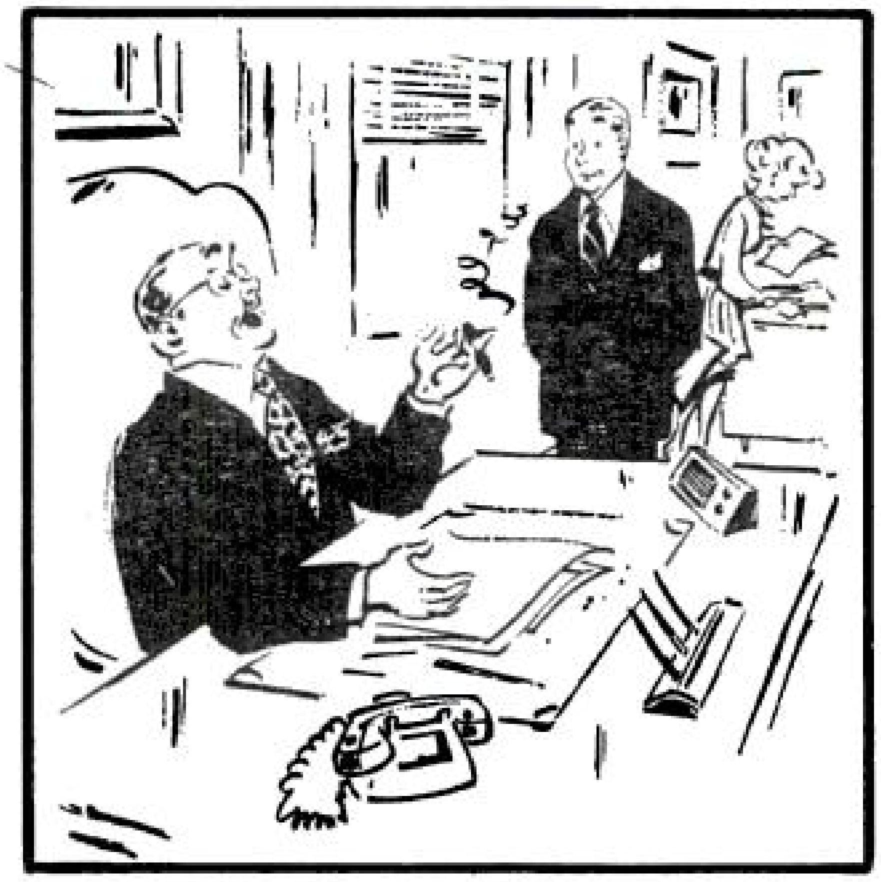
Attitude toward an Age Period
How happy people will be at a particular age will be determined partly by their own childhood experiences with other people at that age and partly by cultural stereotypes.

Realism of Self-Concepts
People who believe their abilities to be greater than they actually are are unhappy when they fail to reach their goals. Their unhappiness is intensified by feelings of inadequacy and by the belief that they are misunderstood and mistreated.

Realism of Role Concepts
People tend to romanticize a role they will play at a later age. If the new role does not live up to their expectations, they will be unhappy unless they are willing to accept the realities of the new role. As a group, children and adolescents tend to have more unrealistic role concepts than adults. This contributes to unhappiness at these age levels.

Sears has reported that among men of very high intelligence there is a tendency to regard life satisfactions as coming more from happy family life than from successful achievement in occupations. This conclusion was drawn at an average age of sixty-two, as the men looked back and tried to assess what contributed to their satisfaction at different ages in the adult years (97). The relative importance of factors contributing to life satisfaction—occupation, family life, friendship, richness of cultural life, total service to society and joy in living—is shown in Figure 1-9.

By contrast, for children and adolescents who place high value on popularity and acceptance by peers, such factors as money and status symbols, good health and good looks, and opportunities to play the roles they enjoy add to their life satisfactions more than family life or other factors that contribute to happiness during the adult years (39,45,67).



"Happiness comes from within, my boy . . . from within a safety deposit box full of blue-chip stocks and tax-free investments."

FIGURE 1-8 Happiness comes not from material possessions per se, but from how one feels about them. (George Clark. "The Neighbors." Chicago Tribune–New York News Syndicate, Feb. 19, 1973. Used by permission.)

Importance of Happiness and Unhappiness

The significant fact about the unhappiness that occurs during the life span is that it affects people's attitudes and, in turn, leaves its mark on their personalities. Whether they be schoolchildren, factory workers, housewives, or business executives, their chances of developing their potentials are greatly reduced by their unhappy mental states.

Linn, for example, has reported that older people who remember their childhood as unhappy are dissatisfied and unhappy as adults. Their unhappiness and dissatisfaction not only continue as they grow older but tend to increase rather than decrease (67). It has also been reported that those who, as children, were afraid of being laughed at or punished or of not being attractive and popular tended not only to have unhappy memories of childhood but, even more serious, to suffer from self-derogation as adults (53, 54).

One of the most serious facts about unhappiness is that it may and often does become a habit. And, like all habits, the longer it exists, the more deeply rooted and resistant to change it becomes. That is why, as was pointed out above, people who were unhappy as children are far more likely to be unhappy than happy during their adult years.

Because unhappiness can play such havoc with personal and social adjustments throughout life, an attempt will be made throughout the remainder of this book to discuss the causes of unhappiness at each age level and to suggest what might be done to prevent or to minimize it. In addition, emphasis will be placed on the factors that contribute to happiness at each developmental age and on how they might be strengthened to counteract any unhappiness that is inevitable.

From studies made to date, there is ample evidence that satisfaction and happiness in childhood pave the way for satisfaction and happiness during the remaining years of a person's life. This, however,

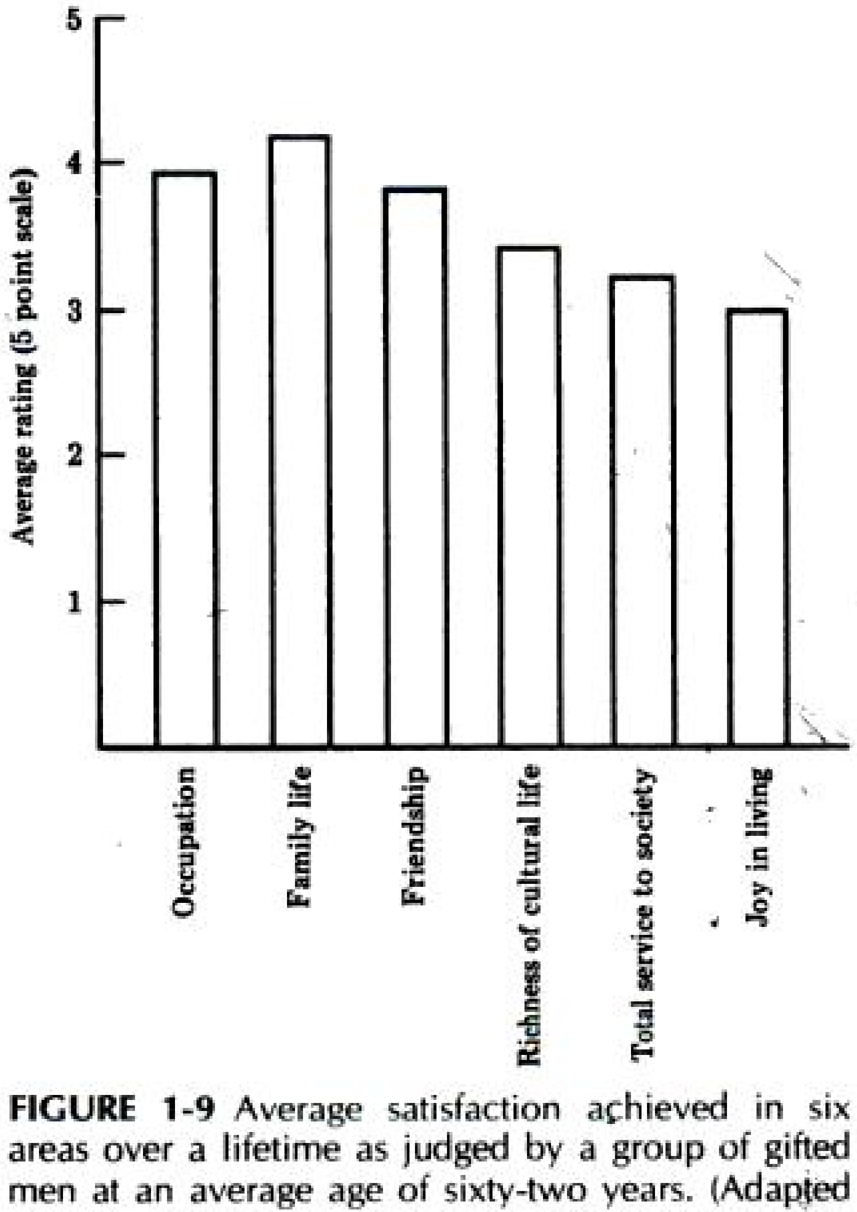


FIGURE 1-9 Average satisfaction achieved in six areas over a lifetime as judged by a group of gifted men at an average age of sixty-two years. (Adapted from R. R. Sears. Sources of life satisfactions of the Terman gifted men. *American Psychologist,* 1977, **32,** 119–128. Used by permission.)

is possible only if the three ingredients of happiness are present. If children learn how to behave in such a way as to encourage others to accept them as friends not only then but as they grow older; if they learn to show affection for others and to expect affection from others with no thought of reciprocation; and if they have realistic concepts of their abilities so that their achievements will come up to their expectations, they can anticipate satisfaction and happiness for the remainder of their lives.

Chapter Highlights

1. Developmental psychology, which studies growth and decline from conception to death, has six major objectives: to find out the common and characteristic age changes; when these changes occur; what causes them; how they influence behavior; whether they can be predicted; and whether they are individual or universal.
2. There are five incentives to studying developmental changes: traditional beliefs, practical problems engendered by these changes, a desire to prove or disprove theories about developmental changes, an attempt to determine the relative importance of nature's and nurture's influence on developmental changes, and a desire to substantiate material accumulated from research or from practical experience.
3. Attitudes toward developmental changes are influenced by the individual's appearance and behavior, by cultural stereotypes, by cultural values, by role changes, and by personal experiences.
4. There are ten significant facts about development: early foundations are critical; maturation and learning are responsible for development; development follows a definite and predictable pattern; all individuals are different; each phase of development has characteristic behavior and hazards; development is aided by stimulation and is affected by cultural changes; there are social expectations for every stage of development; and there are traditional beliefs about individuals at all ages.
5. Even though all individuals are different, they follow definite and predictable patterns of development that are similar for all.
6. Developmental tasks serve three useful purposes: they are guidelines to enable individuals to know what society expects of them; they motivate individuals to do what society expects; and they show individuals what lies ahead and what will be expected of them later.
7. The three common potential hazards relating to developmental tasks are inappropriate expectations, the bypassing of a stage of development due to failure to master the developmental tasks for that stage, and the crises individuals experience as they pass from one stage of development to another.
8. The life span of today differs from that of the past in two ways: the proportion of individuals at different age levels is becoming increasingly similar, and American men and women, on the average, live longer than those in other countries and longer than did those in America in the past.
9. The life span can be divided into ten periods: prenatal, infancy, babyhood, early childhood, late childhood, puberty, adolescence, early adulthood, middle age, and old age.
10. The recent focus of scientific interest in the life span has been on middle and old age, while the focus of interest was formerly centered on the early years of life.
11. There are many obstacles to studying life-span development, the most common of which are getting representative samples of subjects, establishing rapport with subjects, finding a satisfactory method for studying development at different ages, verifying the accuracy of the data obtained, and conforming to ethical standards regarding research at different age levels.
12. The most difficult and least satisfactorily coped-with obstacles in studying life-span development are finding suitable methods and conforming to ethical standards of research.
13. Because happiness and unhappiness are subjective states, information about them must come from intropective and retrospective reports or from answers to questionnaires, all of which lack scientific accuracy.
14. At all ages there are three essentials of happiness —acceptance, affection, and achievement—all of which must be fulfilled to the individual's satisfaction if happiness is to be attained.
15. The major obstacles to happiness at any age may be subjective or environmental, though the former tend to dominate.

Bibliography

1. Allen, G., and K. D. Pettigrew. Heritability of IQ by social class: Evidence inconclusive. *Science*, 1973, **182**, 1042–1044.
2. Alpaugh, P. A., and J. E. Birren. Are there sex differences in cre-

ativity across the adult life span? *Human Development*, 1975, **18**, 461–465.

3. Alston, J. P., and C. J. Dudley. Age, occupation, and life satisfaction. *Gerontologist*, 1973, **13**, 58–61.

4. APA Monitor report. Tips on interviewing children. *APA Monitor*, 1977, **8**(4), 7.

5. Baumrind, D. From each according to her ability. *School Review*, 1972, **80**, 161–197.

6. Bayley, N. The life span as a frame of reference in psychological research. In D. C. Charles and W. R. Looft (Eds.). *Readings in psychological development through life*. New York: Holt, 1973, Pp. 5–17.

7. Bell, B. D. Cognitive dissonance and life satisfaction of older adults. *Journal of Gerontology*, 1974, **30**, 564–571.

8. Bell, R. Q., and T. W. Hertz. Toward more comparatability and generalability in developmental research. *Child Development*, 1976, **47**, 6–13.

9. Bernard, J. Note on changing life styles, 1970–1974. *Journal of Marriage & the Family*, 1975, **37**, 582–593.

10. Bijou, S. W. Ages, stages, and the naturalization of human development. *American Psychologist*, 1968, **23**, 419–427.

11. Bijou, S. W. Development in the preschool years: A functional analysis. *American Psychologist*, 1975, **30**, 829–837.

12. Borland, D. C. Research on middle age: An assessment. *Gerontologist*, 1978, **18**, 379–386.

13. Bower, T. G. R. Repetitive processes in child development. *Scientific American*, 1976, **235**(5), 38–47.

14. Brody, J. E. Studies asking: "Who's happy?" *The New York Times*, Jan. 16, 1979.

15. Bronfenbrenner, U. Developmental research, public policy, and the ecology of childhood. *Child Development*, 1974, **45**, 1–5.

16. Bronfenbrenner, U. Toward an experimental ecology of human development. *American Psychologist*, 1977, **32**, 513–531.

17. Brooks, J. B., and D. M. Elliott. Prediction of psychological adjustment at age thirty from leisure time activities and satisfactions in childhood. *Human Development*, 1971, **14**, 51–61.

18. Brotman, H. B. Life expectancy: Comparison of national levels in 1900 and 1974 and variations in state levels, 1969–1971. *Gerontologist*, 1977, **17**, 12–22.

19. Browning, R. Why not humor? *APA Monitor*, 1977, **8**(2), 1, 32.

20. Brubaker, T. H., and E. A. Powers. The stereotype of "old": A review and alternative approach. *Journal of Gerontology*, 1976, **31**, 441–447.

21. Bühler, C. The course of human life as a psychological problem. In W. R. Looft (Ed.). *Developmental psychology: A book of readings*. Hinsdale, Ill.: Dryden Press, 1972, Pp. 68–84.

22. Campbell, A. Subjective measures of well-being. *American Psychologist*, 1976, **31**, 117–124.

23. Charlesworth, W. R. Developmental psychology: Does it offer anything distinctive? In W. R. Looft (Ed.). *Developmental psychology: A book of readings*. Hinsdale, Ill.: Dryden Press, 1972, Pp. 1–22.

24. Clemente, F., and W. J. Sauer. Life satisfaction in the United States. *Social Forces*, 1976, **54**, 621–631.

25. Colletto-Pratt, C. Attitudinal predictors of devaluation of old age in a multigenerational sample. *Journal of Gerontology*, 1976, **31**, 193–197.

26. Croake, J. W., and D. E. Hinkle. Methodological problems in the study of fears. *Journal of Psychology*, 1976, **93**, 197–202.

27. Cronbach, L. J. Five decades of public controversy over mental testing. *American Psychologist*, 1975, **30**, 1–14.

28. Denney, N. W. Evidence for developmental changes in categorization criteria for children and adults. *Human Development*, 1974, **17**, 41–53.

29. Dennis, W. (Ed.). *Historical readings in developmental psychology*. New York: Appleton-Century-Crofts, 1972.

30. Dobzhansky, T. Differences are not defects. *Psychology Today*, 1973, **7**(7), 96–101.

31. Donohue, B., and R. G. Ratliff. The effects of reward, punishment, and knowledge of results on children's discrimination learning. *Journal of Genetic Psychology*, 1976, **129**, 97–123.

32. Drevenstedt, J. Perceptions of onsets of young adulthood, middle age and old age. *Journal of Gerontology*, 1976, **31**, 53–57.

33. Edwards, J. N., and D. L. Klemmack. Correlates of life satisfaction: An examination. *Journal of Gerontology*, 1973, **28**, 497–502.

34. Eichorn, D. H. The Berkeley longitudinal studies: Continuities and correlates of behavior. *Canadian Journal of Behavioral Science*, 1973, **5**, 297–320.

35. Erikson, E. H. *Identity and the life cycle. Selected papers*. Psychological Issues Monographs, Vol. 1, No. 1. New York: International Universities Press, 1967.

36. Forbes, W. F. A possible similar pathway between smoking-induced life shortening and natural aging. *Journal of Gerontology*, 1973, **28**, 302–311.

37. Fry, C. L. The ages of adulthood: A question of numbers. *Journal of Gerontology*, 1976, **31**, 170–177.

38. Gagné, R. M. Developmental readiness. In D. C. Charles and W. R. Looft (Eds.). *Readings in psychological development through life*. New York: Holt, 1973, Pp. 139–146.

39. Garai, J. E. Sex differences in mental health. *Genetic Psychology Monographs*, 1970, **81**, 123–142.

40. Gottfried, N. W., and B. Seay. An observational technique for preschool children. *Journal of Genetic Psychology*, 1973, **122**, 263–268.

41. Harris, D. B. The development of potentiality. *Teachers College Record*, 1960, **61**, 423–428.

42. Harry, J. Evolving sources of happiness for men over the life cycle: A structural analysis. *Journal of Marriage & the Family*, 1976, **38**, 289–296.

43. Havighurst, R. J. *Developmental tasks and education*. (3rd ed.) New York: McKay, 1972.

44. Hayflick, L. Biomedical gerontology: Current theories of biological aging. *Gerontologist*, 1974, **14**, 454, 458.

45. Horn, J. Love: The most important ingredient of happiness. *Psychology Today*, 1976, **10**(2), 98–102.

46. Jackson, D. W. Advanced aged adults' reflections of middle age. *Gerontologist*, 1974, **14**, 255–257.

47. James, W. *Talks to teachers on psychology*. New York: Holt, 1899.

48. Jensen, A. R. The meaning of heritability in the behavioral sciences. *Educational Psychologist*, 1975, **1**, 171–183.

49. Jewett, S. P. Longevity and the longevity syndrome. *Gerontologist*, 1973, **13**, 91–99.

50. Johnston, R. B., and P. R. Magrab. *Developmental disorders: Assessment, treatment, and education*. Baltimore, Md.: University Park Press, 1976.

51. Jones, M. C. A report on three growth studies at the University of California. In D. C. Charles and W. R. Looft (Eds.). *Readings* *in psychological development through life.* New York: Holt, 1973, Pp. 18–29.

52. Jones, M. C., N. Bayley, J. W. Macfarlane, and M. P. Honzik (Eds.). *The course of human development.* Waltham, Mass.: Xerox College Publications, 1971.

53. Kaplan, H. B., and A. D. Pokorny. Age-related correlates of self-derogation: Reports of childhood experiences. *British Journal of Psychiatry,* 1970, **117**, 333–354.

54. Kaplan, H. B., and A. D. Pokorny. Sex-related correlates of adult self-derogation: Reports of childhood experiences. *Developmental Psychology,* 1972, **6,** 536.

55. Kilty, K. M., and A. Feld. Attitudes toward aging and toward the needs of older people. *Journal of Gerontology,* 1976, **31**, 586–594.

56. Kinsbourne, M., and P. Caplan. Life-span development of psychological aging. *Gerontologist,* 1973, **13**, 509–510.

57. Knapp, M. R. J. Predicting the dimensions of life satisfaction. *Journal of Gerontology,* 1976, **31**, 595–604.

58. Kobrin, F. E., and G. E. Hendershot. Do family ties reduce mortality? Evidence from the United States, 1966–1968. *Journal of Marriage & the Family,* 1977, **39**, 737–745.

59. Kuhlen, R. G. Age and intelligence: The significance of cultural change in longitudinal vs. cross-sectional findings. In B. L. Neugarten (Ed.). *Middle age and aging: A reader in social psychology.* Chicago: University of Chicago Press, 1968, Pp. 552–557.

60. LaBouvie, E. W. Descriptive developmental research: Why only time? *Journal of Genetic Psychology,* 1975, **126**, 289–296.

61. Lawrence, S. Panel takes up children as subjects. *APA Monitor,* 1977, **8**(4), 9.

62. Lawton, G. *Aging successfully.* New York: Columbia University Press, 1951.

63. Leon, F. F. Cicero on geriatrics. *Gerontologist,* 1963, **3**, 128–130.

64. Lesnoff-Caravaglia, G. Senescence and adolescence: Middle-age inventions. *Gerontologist,* 1974, **14**, 98.

65. Lewis, M. Infant intelligence tests: Their use and misuse. *Human Development,* 1973, **16**, 108–118.

66. Liebert, R. M., R. W. Poulos, and G. D. Strauss. *Developmental psychology.* Englewood Cliffs, N. J.: Prentice-Hall, 1974.

67. Linn, M. W. Perceptions of childhood: Present functioning and past events. *Journal of Gerontology,* 1973, **28**, 202–208.

68. Lowman, R. P. Animal research: Open season on scientists. *APA Monitor,* 1977, **8**(8), 6–7.

69. Maccoby, E. E., and C. N. Jacklin. Myth, reality and shades of gray: What we know and don't know about sex differences. *Psychology Today,* 1974, **8**(7), 109–112.

70. Mathes, E. W., and A. Kahn. Physical attractiveness, happiness, neurotocism, and self-esteem. *Journal of Psychology,* 1975, **90**, 27–30.

71. McCandless, B. R. Life-span models of psychological aging. *Gerontologist,* 1973, **13**, 511–512.

72. McKinsey, M. E. Applying research and training to improve life for the aged. *Geriatrics,* 1975, **30**(12), 80–84.

73. McKinsey, M. E. Training toward understanding the total spectrum of human development. *Geriatrics,* 1975, **30**(11), 120–126.

74. Medley, M. L. Satisfaction with life among persons sixty-five years and older: A causal model. *Journal of Gerontology,* 1976, **31**, 448–455.

75. Meltzer, H., and D. Ludwig. Age differences in memory optimism and pessimism in workers. *Journal of Genetic Psychology,* 1967, **110**, 17–30.

76. Minton, J. H. The impact of Sesame Street on readiness. *Sociology of Education,* 1975, **48**, 141–151.

77. Moerk, E. L. Verbal interactions between children and their mothers during the preschool years. *Developmental Psychology,* 1975, **11**, 788–794.

78. Naffziger, C. C., and K. Naffziger. Development of sex role stereotypes. *Family Coordinator,* 1974, **23,** 251–258.

79. Neugarten, B. L. Continuities and discontinuities of psychological issues into adult life. *Human Development,* 1969, **12**, 121–130.

80. Neuhauser, G. Methods of assessing and recording motor skills and movement patterns. *Developmental Medicine & Child Neurology,* 1975, **17**, 369–386.

81. Neumann, C. P. Success today: Achievement without happiness. *Psychosomatics,* 1975, **16**, 103–106.

82. *New York Times* report. New population trends transforming U.S. *The New York Times,* Feb. 6, 1977.

83. Palmore, E. B., and V. Kivett. Change in life satisfaction: A longitudinal study of persons aged 46–70. *Journal of Gerontology,* 1973, **32**, 311–316.

84. Palmore, E. B., and K. Manton. Ageism compared with racism and sexism. *Journal of Gerontology,* 1973, **28**, 363–369.

85. Palmore, E. B., and V. Stone. Predictors of longevity: A follow-up of the aged in Chapel Hill. *Gerontologist,* 1973, **13**, 88–90.

86. Phillips, D. C., and M. E. Kelly. Hierarchical theories of development in education and psychology. *Harvard Educational Review,* 1975, **45,** 351–375.

87. Piaget, J. Piaget's theory. In P. H. Mussen (Ed.), *Carmichael's manual of child psychology.* (3rd ed.) Vol. 1. New York: Wiley, 1970, Pp. 703–732.

88. Piechowski, M. M. A theoretical and empirical approach to the study of development. *Genetic Psychology Monographs,* 1975, **92**, 231–297.

89. Reich, W. T. Ethical issues related to research involving elderly subjects. *Gerontologist,* 1978, **18**, 326–337.

90. Ridley, J. C., C. A. Bachrach, and D. A. Dawson. Recall and reliability of interview data from older women. *Journal of Gerontology,* 1979, **34**, 99–105.

91. Roodin, P. A., and W. E. Simpson. Effectiveness of social reinforcement as a function of children's familiarity with the experimenter. *Journal of Genetic Psychology,* 1976, **128**, 33–39.

92. Rosenkrantz, A. L., and V. Van de Riet. The influence of prior contact between child subjects and adult experimenters on subsequent child performance. *Journal of Genetic Psychology,* 1974, **124**, 79–90.

93. Salk, L., and R. Kramer. *How to raise a human being.* New York: Warner Books, 1973.

94. Sameroff, A. J. Early influences on development: Fact or fancy? *Merrill-Palmer Quarterly,* 1975, **21**, 267–294.

95. Scarr-Salapatek, S., and M. L. Williams. The effects of early stimulation on low birth-weight infants. *Child Development,* 1973, **44**, 94–101.

96. Scheinfeld, A. *Your heredity and environment.* Philadelphia: Lippincott, 1965.

97. Sears, R. R. Sources of life satisfaction of the Terman gifted men. *American Psychologist,* 1977, **32**, 119–128.

98. Sears, R. R., and S. S. Feldman (Eds.). *The seven ages of man.* Los Altos, Calif.: William Kaufmann, 1973.

99. Senn, M. J. E. Insights on the child development movement in the United States. *Monographs of the Society for Research in Child Development*, 1975, **40**, (3–4).

100. Shaver, P., and J. Freedman. The pursuit of happiness. *Psychology Today*, 1976, **10**(3), 26–32, 75.

101. Sheehy, G. *Passages: Predictable crises of adult life*. New York: Dutton, 1976.

102. Shulman, N. Life-cycle variations in patterns of close relationships. *Journal of Marriage & the Family*, 1975, **37**, 813–821.

103. Sidana, U. R., R. Singh, and P. Srivatava. Social agents in children's happiness. *Journal of Social Psychology*, 1976, **99**, 289–290.

104. Siegel, A. E. Current issues in research on early development. *Human Development*, 1969, **12**, 86–92.

105. Skinner, B. F. The steep and thorny way to a science of behavior. *American Psychologist*, 1975, **30**, 42–49.

106. Smith, A. C., G. L. Flick, G. S. Ferriss, and A. H. Sellmann. Prediction of developmental outcome at seven years from prenatal, perinatal, and postnatal events. *Child Development*, 1972, **43**, 495–507.

107. Spreitzer, E., and E. E. Snyder. Correlates of life satisfaction among the aged. *Journal of Gerontology*, 1974, **29**, 454–458.

108. Stinnett, N., and C. W. Birdsong. Relationship of personality needs to perceptions concerning alternate life styles. *Journal of Genetic Psychology*, 1976, **128**, 301–302.

109. Stinnett, N., and S. Taylor. Parent-child relationships and perceptions of alternate life styles. *Journal of Genetic Psychology*, 1976, **129**, 105–112.

110. Stone, L. J., and J. Church. Some representative theoretical orientations in developmental psychology. In W. R. Looft (Ed.). *Developmental psychology: A book of readings*. Hinsdale, Ill.: Dryden Press, 1972, Pp. 35–59.

111. Thorson, J. A., L. Whatley, and K. Hancock. Attitudes toward the aged as a function of age and education. *Gerontologist*, 1974, **14**, 316–318.

112. Uhlenberg, P. Changing structure of the older population in the U.S.A. during the twentieth century. *Gerontologist*, 1977, **17**, 197–202.

113. Vaillant, G. E. The climb to maturity: How the best and brightest come of age. *Psychology Today*, 1977, **11**(4), 34–41, 107–110.

114. Van den Daele, L. D. A cook's tour of development. *Journal of Genetic Psychology*, 1976, **128**, 137–143.

115. Watthana-Kastr, S., and P. S. Spiers. Geographic mortality rates and rates of aging—a possible relationship? *Journal of Gerontology*, 1973, **28**, 374–379.

116. Webber, R. L., D. W. Combs, and J. S. Hollingsworth. Variations in value orientations by age in a developing society. *Journal of Gerontology*, 1974, **30**, 676–683.

117. White, B. L. First two years of life found to be most critical. *APA Monitor*, 1976, 7(4), 4–5.

118. White, S. H. The learning-maturation controversy: Hall to Hull. *Merrill-Palmer Quarterly*, 1968, **14**, 187–196.

119. Whiting, B. B. Folk wisdom and child rearing. *Merrill-Palmer Quarterly*, 1974, **20**, 9–19.

120. Wolk, S., and S. Telleen. Psychological and social correlates of life satisfaction as a function of residential constraint. *Journal of Gerontology*, 1976, **31**, 89–98.

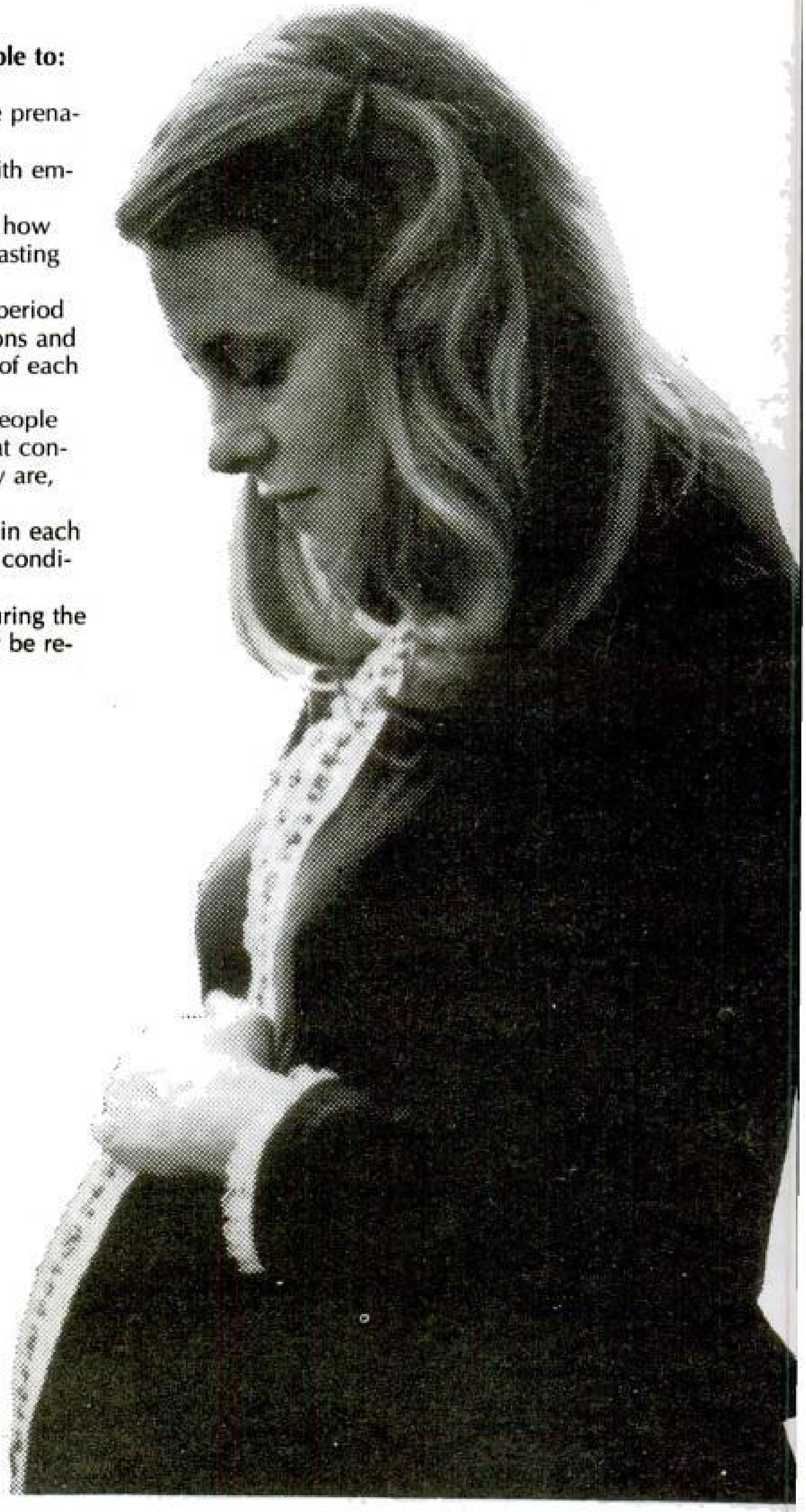
121. Yarrow, M. R., J. D. Campbell, and R. V. Burton. Recollections of childhood: A study of the retrospective method. *Monographs of the Society for Research in Child Development*, 1970, **35**(5).

122. Zender, M. E., and B. F. Zender. Vygotsky's view about the age polarization of child development. *Human Development*, 1974, **17**, 24–40.

CHAPTER TWO
THE PRENATAL PERIOD

After reading this chapter, you should be able to:

- Explain the important characteristics of the prenatal period.
- Describe the ways in which life begins, with emphasis on the preliminary stages.
- Point out why the time of conception and how what happens at that time can have long-lasting effects on development.
- Call attention to the fact that the prenatal period is customarily divided into three subdivisions and summarize the outstanding characteristics of each of them.
- Describe how the attitudes of significant people toward the child-to-be are developed, what conditions influence them, how persistent they are, and what effects they have.
- Summarize the common physical hazards in each subdivision of the prenatal period and the conditions influencing them.
- List the common psychological hazards during the prenatal period and explain why they may be regarded as hazardous.



Early research studies in developmental psychology ignored the prenatal period. Some studies started with the preschool child but most with the school-age child. Later studies extended downward to the time of birth, but it was not until the mid-1940s that developmental psychologists turned their attention to the prenatal period.

By that time it had become apparent that starting the study of development part way along in the life span was like coming into a play or movie after it had started or turning on the TV in the middle of a program. It was recognized that knowing what happens before birth is essential to a complete understanding of the normal pattern of development and to a realization of what can happen to distort this pattern.

Today there is extensive evidence to show how conditions in the prenatal environment can and do affect development before birth. This has justified beginning the study of development from the moment of conception rather than from the time of birth.

Most of the development that takes place before birth has been investigated by physiologists and members of the medical profession, and the results of these studies have been extensively borrowed by developmental psychologists. Their contributions have, for the most part, been to supplement the physiological and physical data with evidence of the effects of psychological states on the pattern of development and the long-term effects of attitudes of significant people.

In this chapter, an attempt will be made to explain the major happenings during the nine months before birth, to emphasize the significance of the moment of conception, and to show what environmental and psychological factors affect the course of development.

CHARACTERISTICS OF THE PRENATAL PERIOD

In spite of the fact that the first developmental period in the life span is next to the shortest of all—the shortest is the period of the newborn or infancy—it is in many respects one of the most, if not *the* most, important period of all. This period, which begins at conception and ends at birth, is approximately 270 to 280 days in length, or nine calendar months.

Although it is relatively short, the prenatal period has six important characteristics, each of which has a lasting effect on development during the life span. They are as follows:

1. The hereditary endowment, which serves as the foundation for later development, is fixed, once and for all, at this time. While favorable or unfavorable conditions both before and after birth may and probably will affect to some extent the physical and psychological traits that make up this hereditary endowment, the changes will be quantitative not qualitative.
2. Favorable conditions in the mother's body can foster the development of hereditary potentials while unfavorable conditions can stunt their development, even to the point of distorting the pattern of future development. At few if any other times in the life span are hereditary potentials so influenced by environmental conditions as they are during the prenatal period.
3. The sex of the newly created individual is fixed at the time of conception and conditions within the mother's body will not affect it, as is true of the hereditary endowment. Except when surgery is used in sex transformation operations, the sex of the individual, determined at the time of conception, will not change. Such operations are rare and only partially successful.
4. Proportionally greater growth and development take place during the prenatal period than at any other time throughout the individual's entire life. During the nine months before birth, the individual grows from a microscopically small cell to an infant who measures approximately twenty inches in length and weighs, on the average, 7 pounds. It has been estimated that weight during this time increases eleven million times. Development is likewise phenomenally rapid. From a cell that is round in shape, all the bodily features, both external and internal, of the human being develop at this time. At birth, the newly born infant can be recognized as human even though many of the external features are proportionally different from those of an older child, an adolescent, or an adult.
5. The prenatal period is a time of many hazards, both physical and psychological. While it cannot be claimed that it is the most hazardous period in the entire life span—many believe that infancy is more hazardous—it certainly is a time when environmental or psychological hazards can have a marked effect on the pattern of later development or may even bring development to an end.
6. The prenatal period is the time when significant people form attitudes toward newly created indi-

viduals. These attitudes will have a marked influence on the way these individuals are treated, especially during their early, formative years. If the attitudes are heavily emotionally weighted, they can and often do play havoc with the mother's homeostasis and, by so doing, upset the conditions in the mother's body that are essential to the normal development of the newly created individual.

HOW LIFE BEGINS

New life begins with the union of a male sex cell and a female sex cell. These sex cells are developed in the reproductive organs, the *gonads*. The male sex cells, the *spermatozoa* (singular: *spermatozoon*), are produced in the male gonads, the *testes*, while the female sex cells, the *ova* (singular: *ovum*), are produced in the female gonads, the *ovaries*.

Male and female sex cells are *similar* in that they contain *chromosomes*. There are twenty-three chromosomes in each mature sex cell, and each chromosome contains *genes*, the true carriers of heredity. A gene is a minute particle which is found in combination with other genes in a stringlike formation within the chromosome. It has been estimated that there are approximately 3,000 genes in each chromosome. These are passed on from parent to offspring (10,53,66).

Male and female sex cells also *differ* in two important ways. First, in the mature ovum there are twenty-three matched chromosomes while in the mature spermatozoon there are twenty-two matched chromosomes and one unmatched chromosome which may be either an X or a Y chromosome. The function of X and Y chromosomes will be discussed later in relation to sex determination.

The second way in which male and female sex cells differ is in the number of preparatory stages of development they pass through before they are ready to produce a new human being. While all sex cells, male or female, must go through preliminary stages of development, male cells go through two preliminary stages—maturation and fertilization—while female cells go through three preliminary stages—maturation, ovulation, and fertilization.

Maturation

Maturation is the process of chromosome reduction through cell division: one chromosome from each pair goes to a subdivided cell, which in turn splits lengthwise and forms two new cells. The mature cell, which contains twenty-three chromosomes, is known as a *haploid cell*. Maturation of sex cells does not occur until sex maturity has been attained, following the onset of puberty in both boys and girls.

In the case of the spermatozoon, there are four new cells, the *spermatids*, each of which is capable of fertilizing an ovum. In the division of the ovum, one chromosome from each pair is pushed outside the cell wall. This new cell is known as a *polar body*. Three polar bodies are formed in the process of division. Unlike the spermatids, the polar bodies cannot be fertilized, while the fourth cell, the *ovum*, can. If, however, the ovum is not fertilized, it disintegrates and passes from the body with the menstrual flow.

Division of the chromosomes during the maturational process is a matter of chance. Any possible combination of chromosomes from the male and female may be found in a new cell after division. It has been estimated that there are 16,777,216 possible combinations of the twenty-three chromosomes from the male and the twenty-three from the female sex cells (66).

Ovulation

Ovulation is a preliminary stage of development limited to the female sex cells. It is the process of escape of one mature ovum during the menstrual cycle. It is believed that the two ovaries alternate in producing a ripe ovum during each menstrual cycle (53,66).

In nonidentical multiple births, two or more mature ova are released from the ovaries. Whether they are released from the same or from both ovaries is still not known nor is it known why more than one mature ovum is released during each menstrual cycle, which is the usual pattern.

After being released from one of the follicles of the ovary, the ovum finds its way to the open end of the Fallopian tube nearest the ovary from which it was released. Once it enters the tube, it is propelled along by a combination of factors: cilia, or hairlike cells which line the tube; fluids composed of estrogen from the ovarian follicle and a mucus from the lining of the tube; and rhythmic, progressive contractions of the walls of the tube. When the length of the menstrual cycle is normal, approximately twenty-eight days, ovulation occurs between the fifth and the twenty-third days of the cycle, with the average on the eleventh day.

Fertilization

Fertilization, which occurs at the time of conception, is the third stage of development preliminary to the beginning of a new life. It normally occurs while the ovum is in the Fallopian tube. More specifically, it is generally believed that fertilization takes place within twelve to thirty-six hours and usually within the first twenty-four hours after the ovum has entered the tube. During coitus, or sexual intercourse, spermatozoa are deposited at the mouth of the uterus. Through strong hormonic attraction, they are drawn into the tubes, where they are aided in making their way up by rhythmic muscular contractions.

After a spermatozoon has penetrated the ovum, the surface of the ovum changes in such a way that no other spermatozoon can enter. After the sperm cell penetrates the wall of the ovum, the nuclei from the two cells approach each other. There is a breakdown in the membrane surrounding each nucleus, and this allows the two nuclei to merge. Thus the species number of chromosomes, forty-six, is restored, with one half coming from the female cell and the other half coming from the male cell.

IMPORTANCE OF CONCEPTION

At the time of conception, four important conditions are determined that influence the individual's later development. What role each of these conditions plays in the individual's development will explain why the time of conception is probably the most important period in the life span.

Hereditary Endowment

The first important happening at the time of conception is the determination of the newly created individual's hereditary endowment. Figure 2-1 shows the contributions to this endowment from both parents and from both maternal and paternal ancestors. Because the hereditary endowment is determined once and for all at the time of conception, its importance is far greater than it would be if it were subject to later change.

The determination of hereditary endowment affects later development in two ways. First, heredity places limits beyond which individuals cannot go. If prenatal and postnatal conditions are favorable, and if people are strongly motivated, they can develop their inherited physical and mental traits to their maximum potential, but they can go no further (10,52,66). Montagu has stressed, "Where we control the environment, we to some extent control heredity. Heredity, it has been said, determines what we *can* do, and environment what we *do* do" (53).

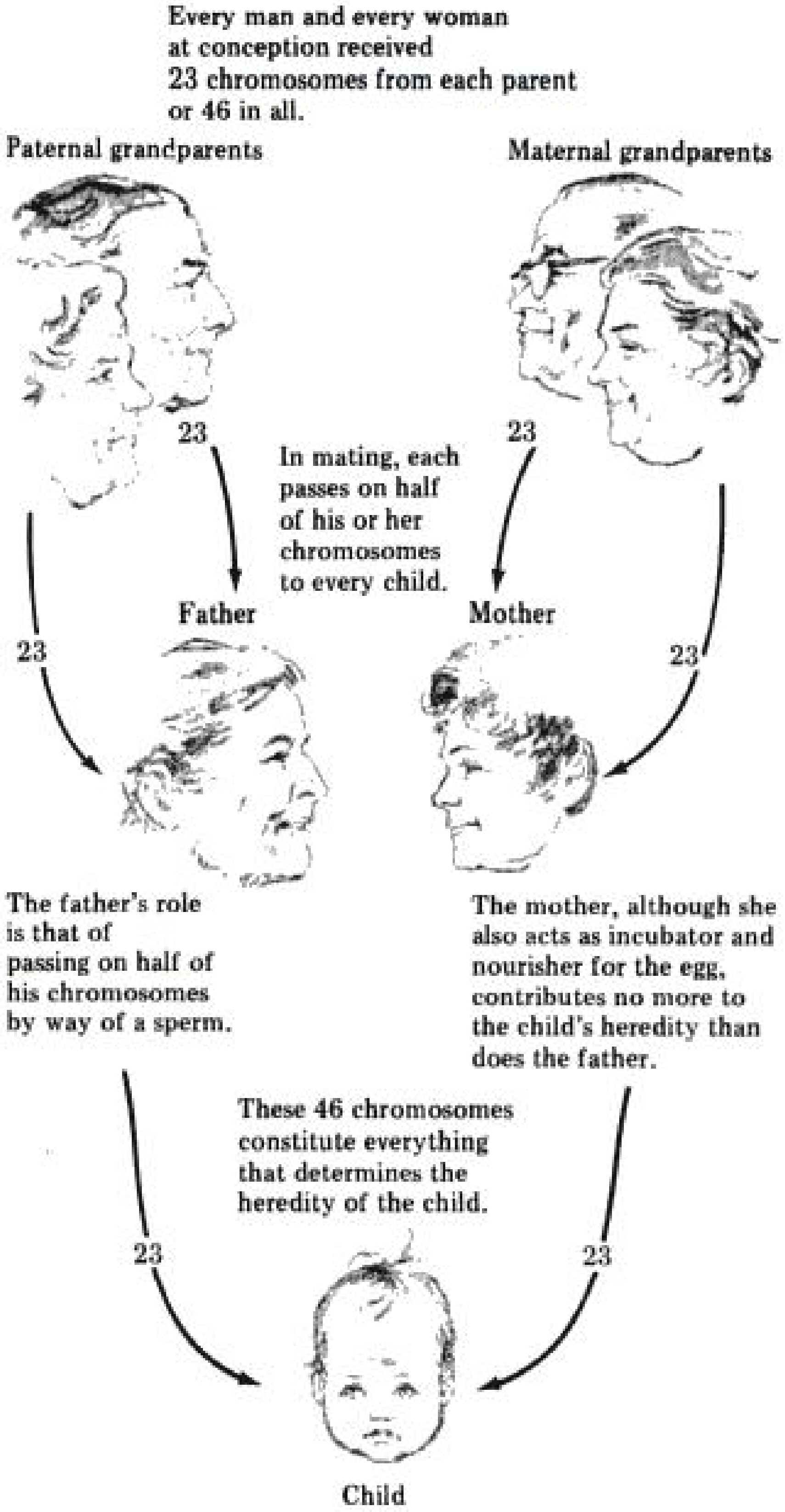

Every man and every woman
at conception received
23 chromosomes from each parent
or 46 in all.
Paternal grandparents
Maternal grandparents
23
23
In mating, each
passes on half
of his or her
chromosomes
to every child.
Father
Mother
23
23
The father's role
is that of
passing on half of
his chromosomes
by way of a sperm.
The mother, although she
also acts as incubator and
nourisher for the egg,
contributes no more to
the child's heredity than
does the father.
These 46 chromosomes
constitute everything
that determines the
heredity of the child.
23
23
Child

FIGURE 2-1 The hereditary process. (Adapted from A. Scheinfeld. *The new you and heredity.* Philadelphia: Lippincott, 1961. Used by permission.)

The second important thing about the hereditary endowment is that it is entirely a matter of chance: there is no known way to control the number of chromosomes from the maternal or paternal side that will be passed on to the child. Scheinfeld has pointed out that the birth of a given individual depends on the union of a particular ovum with a particular sperm. The probability that this particular union will occur is only 1 in 300,000,000,000,000 (300 trillion) (66).

Sex

Determination of the individual's sex is the second important happening at the time of conception. Sex depends on the kind of spermatozoon that unites with the ovum.

Two kinds of mature spermatozoa are produced in equal numbers. The first contains twenty-two matched chromosomes plus one X chromosome; the second contains twenty-two matched chromosomes plus one Y chromosome. The X and Y chromosomes are the sex-determining chromosomes. The mature ovum always contains an X chromosome. If it is fertilized by a Y-bearing spermatozoon, the offspring will be a boy; if it is fertilized by an X-bearing spermatozoon, the offspring will be a girl. Figure 2-2 shows how sex is determined.

Once the male and female cells have united, nothing can be done to change the sex of the newly formed individual. Whether this individual is male or female will have a lifelong effect on the individual's patterns of behavior and personality.

There are three reasons why the sex of an individual is important to lifelong development. First, each year children come under increasing cultural pressures from parents, teachers, their peer group, and society at large to develop attitudes and behavior patterns that are considered appropriate for members of their sex. Children who learn to behave in ways that are considered appropriate for their sex are assured of social acceptance. By contrast, children who fail to conform are subjected to criticism and social ostracism.

Second, learning experiences are determined by the individual's sex. In the home, at school, and in play groups, children learn what is considered appropriate for members of their sex. A boy who learns to play girls' games is labeled a "sissy" and girls who prefer boys' games are known as "tomboys."

Third, and perhaps most important of all, is the attitude of parents and other significant family members toward individuals because of their sex. Studies of sex preferences for offspring have revealed that the traditional preference for a boy, especially for the firstborn, still persists. Strong preferences for a child of a given sex have marked influences on parents' attitudes, which in turn affect their behavior toward the child and their relationships with the child (31,38).

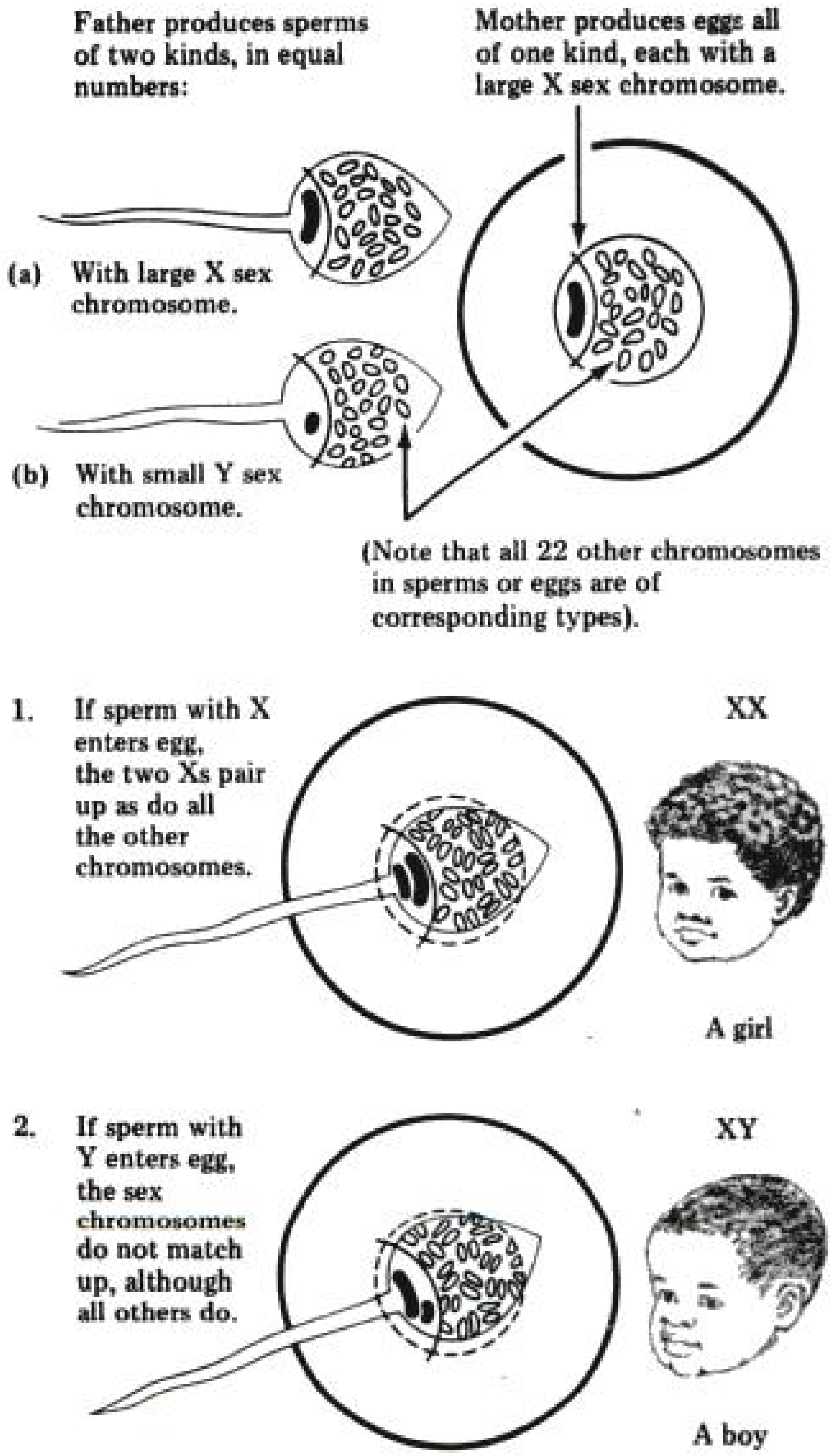

Father produces sperms of two kinds, in equal numbers:
Mother produces eggs all of one kind, each with a large X sex chromosome.
(a) With large X sex chromosome.
(b) With small Y sex chromosome.
(Note that all 22 other chromosomes in sperms or eggs are of corresponding types).
1. If sperm with X enters egg, the two Xs pair up as do all the other chromosomes.
XX
A girl
2. If sperm with Y enters egg, the sex chromosomes do not match up, although all others do.
XY
A boy

FIGURE 2-2 How sex is determined. (Adapted from A. Scheinfeld. *The new you and heredity.* Philadelphia: Lippincott, 1961. Used by permission.)

Number of Offspring

The third important happening at the time of conception or shortly thereafter is the determination of the number of offspring there will be. While most humans are singletons, multiple births also occur. Meredith has reported that 1 out of 80 births is twins, 1 out of every 9,000 is triplets, and 1 out of every 570,000 is quadruplets (47). There are more frequent multiple births among blacks and fewer among Chinese, Japanese, and other Mongoloid-race groups than there are among whites (47,53,65).

When a ripe ovum is fertilized by one spermatozoon, the result will be a *singleton*, unless the fertilized ovum (*zygote*) splits into two or more distinct parts during the early stages of cell cleavage. When this happens, the result will be identical (uniovular) twins, triplets, or other multiple births. If two or more ova are released simultaneously and are fertilized by different spermatozoa, the result will be *nonidentical* (also called *biovular* or *fraternal*) twins, triplets, or other multiple births.

Approximately one-third of all twins are identical. Because the chromosomes and genes of the two or more zygotes from which individuals of nonidentical multiple birth develop are not the same, their mental and physical makeups are different. By contrast, those of identical multiple birth come from the same zygote, and consequently they have the same assortment of chromosomes and genes. Children of identical multiple birth are always of the same sex, while those of nonidentical multiple birth may be of the same or opposite sex.

Effects on Development Most studies of the effects of multiple birth on development have been limited to twins for the reason that triplets, quadruplets, and other multiple births occur very infrequently and the mortality rates among them are much higher than among twins, thus making studies of them difficult if not impossible.

However, there is reason to assume that the effects of multiple birth on triplets, quadruplets, and other multiples is much the same as on twins though the former feel these effects to a greater extent.

The reason that multiple births affect the pattern of development is not only that there are differences in heredity but that both the prenatal environment and the postnatal environment of singletons are different from those of children of multiple birth. This contributes to different patterns of development, different patterns of behavior, and differences in personality.

Before birth, the singleton has the mother's uterus to itself, and thus development is not affected by crowding, a factor in multiple births that will be discussed more fully in the following chapter.

During the early years, when the foundations of the personality pattern are being laid, twins must share the mother's attention and, consequently, may feel unloved or actually rejected. (Photo by Erika Stone.)

There are also differences in the postnatal environments of singletons and those of multiple birth. While the mother can give her undivided attention to the care of a singleton, those of multiple birth must share it. Thus during the early years, when the foundations of the personality pattern are laid, babies of multiple birth receive less mothering than singletons, and consequently they may feel unloved or actually rejected.

Many parents, especially mothers, feel that children of multiple birth should be dressed alike and share the same friends and engage in the same play activities. This is particularly true when the children are of the same sex. Being subjected to pressures to be alike and being denied opportunities to develop their individualities leaves its mark on their personalities and on their patterns of behavior.

Box 2-1 lists and briefly explains some of the most frequently reported characteristics of twins. It should be apparent that hereditary factors are by no means alone responsible for these characteristics; environmental factors, especially in the form of social pressures, play an even more important role. As Koch has concluded from her extensive studies of twins, "It does seem to me that the play of forces, biological and social, upon twins is rather different in many respects from that which molds singletons" (39).

Long-Term Effects of Twinship To date, few longitudinal studies of twins have been made. Those that have been made rarely go beyond the tenth year of

BOX 2-1

SOME COMMON CHARACTERISTICS OF TWINS

Developmental Lag

In physical, mental, motor, and speech development, twins tend to lag behind singletons of the same age. Lag in motor and speech development are shown in Figure 2-3. This lag may be due to brain damage or to prematurity but it is more likely to be due to parental overprotectiveness.

Physical Development

Twins tend to be smaller, age for age, than singletons. This is generally due to the fact that they are premature. They also suffer from brain damage and other physical defects more often than singletons.

Mental Development

Mental similarities between identical twins are much greater than between nonidentical twins and this persists into old age. Identical twins also show strong similarities in terms of special abilities, such as musical and artistic aptitudes.

Social Development

Twins tend to compete for adult attention, to imitate each other's speech and behavior, and to depend on each other for companionship during the preschool years. As they grow older, sibling rivalry and competition develop. One twin usually takes on the role of leader, forcing the other into the role of follower. This affects their relationships with other family members and with outsiders.

Personality Development

Many twins have difficulty in developing a sense of personal identity. This is especially true of identical twins and of nonidentical twins of the same sex. Others enjoy the close relationship of twinship and the attention they receive as a result of their similarity in appearance. This leads to self-satisfaction and self-confidence.

Behavior Problems

Behavior problems have been reported to be more common among twins than among singletons of the same ages. It is thought that this is a result of the way twins are treated, both at home and outside the home. Behavior problems have also been reported to be more common among nonidentical than among identical twins. It has been suggested that this is because rivalry is stronger between nonidentical than identical twins.

the twins' lives, though cross-sectional studies of twins at different ages have been more frequent. These studies have indicated the following long-term effects.

There is a tendency for the developmental lag in physical development to end before children reach puberty and often much earlier (83). Generally the firstborn twin continues to be larger, brighter, and better adjusted socially throughout the childhood years (80). The smaller the twins at birth, the longer the developmental lag tends to persist (2,3).

The mutual dependency or "twinning relationship" so common among young twins and the one-sided dependency of the smaller on the larger twin generally give way to social relationships similar to those of singletons before the twins enter school. Those who attend day-care centers or preschools tend to abandon these patterns of dependency earlier than twins whose environment is limited to the home (44). Koch has reported that fraternal twins are more vulnerable to external pressures and to have less support from the twinship relationship than do identical twins not only when they are young but also as they grow older (39). A study of the syntactic abilities of identical and fraternal twins and their siblings has shown that by the time twins are five years old, these abilities are as good as those of their siblings (54).

Ordinal Position

The fourth thing that happens at the time of conception is the establishment of the new child's ordinal position among siblings. While this may change within a year or two after birth, the child's ordinal position remains fairly static from then on. For example, a second-born child may be the "baby of the family" or hold a last-born ordinal position for a year or more after birth but then be replaced by a newly born sibling. Shifting from the "baby-of-the family" position

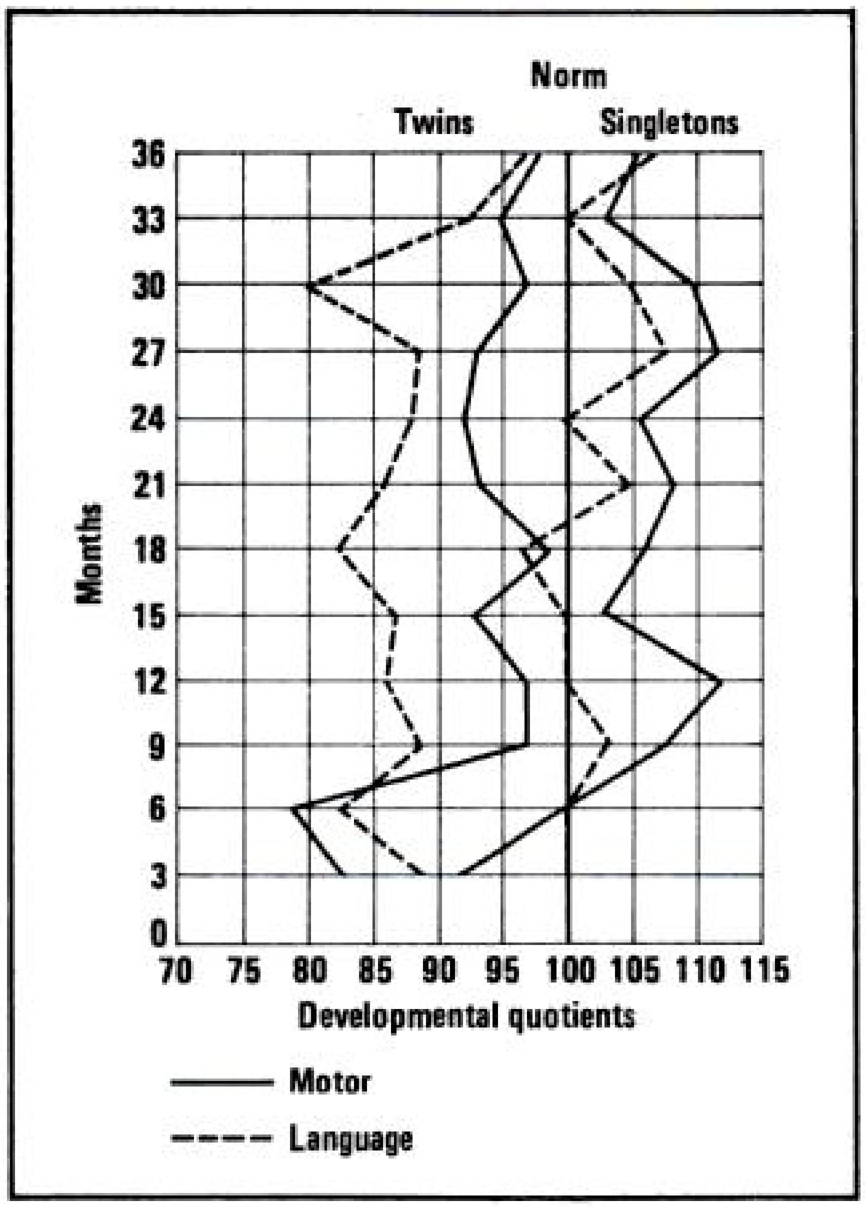


FIGURE 2-3 Developmental lag in motor and language development among twins during the first three years of postnatal life. (Adapted from R. J. Dales. Motor and language development of twins during the first three years. *Journal of Genetic Psychology*, 1969, **114,** 263–271. Used by permission.)

to a middle-born's position may be upsetting for a short time, but young children or even babies tend to adjust to these changes.

There is evidence to conclude that it is not ordinal position per se that leaves its mark on the individual's personality and patterns of behavior but rather circumstances in life related to this position—such as the role the individual plays in the family and the treatment he or she receives from significant family members and their attitudes. Since roles, attitudes, and treatment are far more likely to persist than to change, the individual constantly receives reinforcements which, in time, result in firmly established habits.

Forer has described the effects of ordinal position on the individual in the following way (25):

> *Your place in the family strongly influences how you cope with people and the world. . . . Much of a child's development depends on interactions with siblings. . . . All members of a family force on one another certain patterns of behavior as they interact in meeting their needs. . . . It is in this way . . . that the position in the family leaves an indelible stamp on a person's life style.*

Bigner has described specifically how being a second-born or a firstborn in a family affects the child's development. He contends, "A second-born child plays a 'satellite' role in many of his interactions with the older, since the firstborn may act as the natural leader of the siblings in the family constellation" (5).

Box 2-2 gives some of the most common characteristics associated with ordinal position. How ordinal position will affect the individual will depend on a number of conditions, the two most important of which are the sex of the individual and how individuals feel about the roles they are expected to play.

A firstborn girl, for example, who is expected to help with the housework and with the care of young siblings may resent the fact that the boys in the family have fewer domestic duties and are granted privileges and given opportunities denied to her. A second- or later-born boy may resent being "bossed" by an older female sibling or being treated as the "baby of the family" while his female siblings are given more privileges and freedom than he is given.

Some individuals enjoy the role they are expected to play as a result of their ordinal position while others do not. A firstborn child, for example, may resent the pressures of parents to live up to their expectations or having to act as a model for younger siblings. (See Figure 2-4.) On the other hand, the firstborn may derive personal satisfaction from serving as a role model for younger siblings (5).

Long-Term Effects of Ordinal Position Relatively few longitudinal studies have been made of the effects of different ordinal positions. But a few studies of older children, adolescents, and adults of different ordinal positions give clues as to how ordinal position may become a persistent factor in determining the kind of personal and social adjustments the individual will make throughout the life span.

There is evidence that firstborns tend to be brighter and to be higher achievers than their later-born siblings (87,88,89). There is little or no evi-

BOX 2-2

SOME COMMON CHARACTERISTICS ASSOCIATED WITH ORDINAL POSITION

Firstborns

- Behave in a mature way because of association with adults and because they are expected to assume responsibilities.
- Resent having to serve as models for younger siblings and having to assume some of their care.
- Tend to conform to group wishes and pressures and to be suggestible as a carryover of conformity to parental wishes.
- Have feelings of insecurity and resentment as a result of having been displaced as the center of attention by a second-born sibling.
- Lack dominance and aggressiveness as a result of parental overprotectiveness.
- Develop leadership abilities as a result of having to assume responsibilities in the home. But these are often counteracted by tendencies to be "bossy."
- Usually are high achievers or overachievers because of parental pressures and expectations and a desire to win back parental approval if they feel they are being replaced by younger siblings.
- Are often unhappy because of insecurity arising from displacement by younger siblings and resentment at having more duties and responsibilities than younger siblings.

Middle-borns

- Learn to be independent and adventuresome as a result of greater freedom.
- Become resentful or try to emulate the other's behavior when compared unfavorably with an older sibling.
- Resent privileges older siblings are granted.
- Act up and break rules to attract parental attention to themselves and take it away from older or younger siblings.
- Develop a tendency to "boss," ridicule, tease, or even attack younger siblings who get more parental attention.
- Develop the habit of being underachievers as a result of fewer parental expectations and less pressure to achieve.
- Have fewer responsibilities than firstborns—which they often interpret as meaning they are inferior. This then discourages the development of leadership qualities.
- Are plagued by feelings of parental neglect. This then encourages feelings of inadequacy and inferiority which, in turn, encourage development of behavior disorders.
- Turn to outsiders for peer companionship—but this often leads to better social adjustments than those made by firstborns.

Last-borns

- Tend to be willful and demanding as a result of less strict discipline and "spoiling" by family members.
- Have fewer resentments and greater feelings of security as a result of never being displaced by younger siblings.
- Are usually protected by parents from physical or verbal attacks by older siblings and this encourages dependency and irresponsibility.
- Tend to underachieve because of fewer parental expectations and demands.
- Experience good social relationships outside the home and are generally popular but infrequently leaders because of lack of willingness to assume responsibilities.
- Tend to be happy because of attention and "spoiling" from family members during early childhood.

dence, on the other hand, that this is due to hereditary difference but rather to environmental conditions that foster the child's intellectual development. Firstborns are not only given more intellectual stimulation than later-borns but they are also given more opportunities to develop their intellectual abilities in school and college (1,70,89). As Zajonc has pointed out, "Parents and psychologists have always regarded firstborn children as different and special and, as a result, have given them greater intellectual stimulation and opportunities to develop their intellectual capacities than their later-born siblings have had" (87).

Because of the greater opportunities they are given and because of the special treatment they receive, firstborns have been found to outnumber later-borns in leadership roles as early as elementary

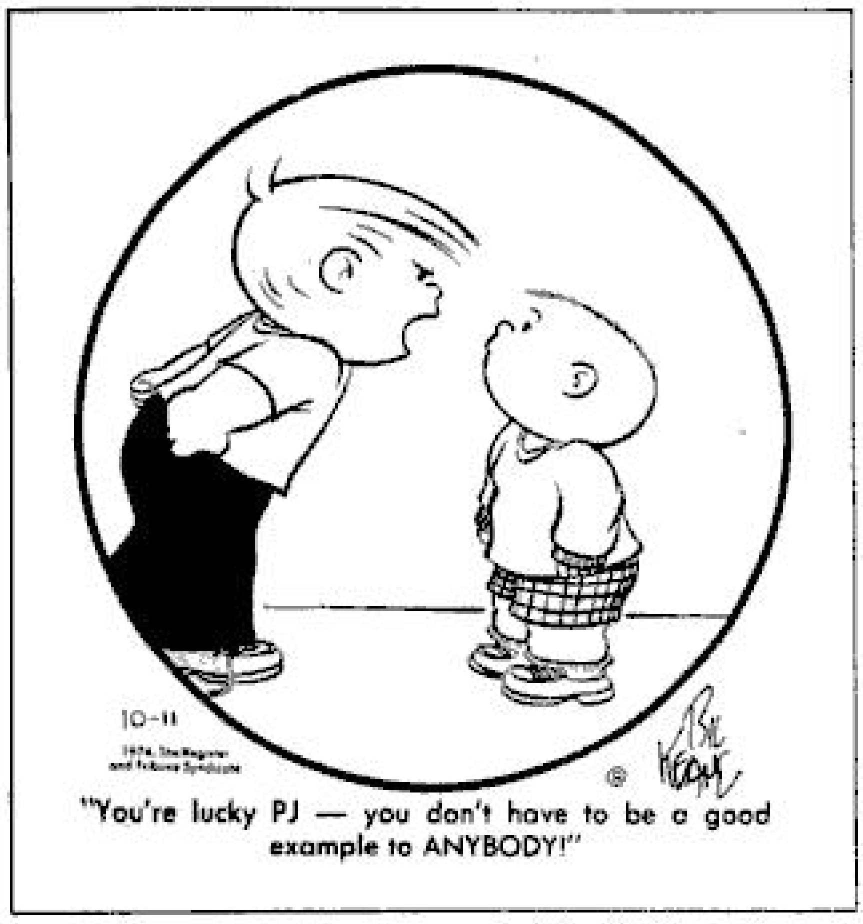

10-11
1974, The Register and Tribune Syndicate
©
Bil Keane
"You're lucky PJ — you don't have to be a good example to ANYBODY!"

FIGURE 2-4 Many firstborns resent having to be role models for younger siblings. (Bil Keane. "The Family Circus." Register and Tribune Syndicate, Oct. 11, 1974. Used by permission.)

school (56). On the other hand, because of greater overprotectiveness and parental concern about their physical welfare, firstborns tend to be more concerned about their health and to consult doctors more frequently than do later-borns (79). They also tend to be more cautious and take fewer risks as children and as adults than do siblings of other ordinal positions (57).

Several studies of the effects on marital adjustments of ordinal position in the childhood family have revealed that the best marital adjustments were in families where the husbands were the oldest brothers with younger sisters while the poorest adjustments and the greater number of divorces were in families where the husbands were the younger brothers with older sisters and where the wives had, during childhood, learned to be bossy as a result of playing surrogate-mother roles. By contrast, husbands who, as firstborns in their childhood homes, learned to take responsibility made better adjustments to marriage (25,30).

PERIODS OF PRENATAL DEVELOPMENT

The prenatal period is ten lunar months of twenty-eight days each in length or nine calendar months. However, the period can and does vary greatly in length, ranging from 180 to 334 days. There are approximately three times as many babies born prematurely as postmaturely.

Meredith has reported that the average length of the prenatal period is 38 weeks or 266 days. However, 70 percent of babies vary from 36 to 40 weeks (252 to 280 days) and 98 percent range from 34 to 42 weeks (238 to 294 days) (47).

Because prenatal development is orderly and predictable, it is possible to give a timetable of the important developments taking place during this period. The prenatal period is generally divided into three stages—the periods of the zygote, of the embryo, and of the fetus—each of which has a predictable length of time and is characterized by specific developments. These developments and the times when they normally occur are outlined in Box 2-3.

Should anything happen to prevent these developments from taking place at the proper time, individuals will suffer handicaps that may plague them for the rest of their lives.

ATTITUDES OF SIGNIFICANT PEOPLE

Until the early 1940s, psychological interest in the prenatal period was concentrated on the physical conditions in the mother's body that might affect development and on the persistence of these effects into postnatal life. The work of Sontag and his associates, for example, called attention to the fact that the mother's emotional state can affect the development of the unborn child (71,72).

Now, however, psychologists are interested in finding out what is responsible for maternal and other family-member attitudes toward the developing child; how persistent these attitudes are; and what effects they have on the relationships of different family members with children during their postnatal lives, especially during the early formative years when the significant people in their world are members of their families. While relatively recent in origin, these studies have revealed the important information summarized below.

BOX 2-3

TIMETABLE OF PRENATAL DEVELOPMENT

Period of the Zygote *(fertilization to end of second week)*

- The size of the zygote—that of a pinhead—remains unchanged because it has no outside source of nourishment; it is kept alive by yolk in the ovum.
- As the zygote passes down the Fallopian tube to the uterus, it divides many times and separates into an outer and an inner layer.
- The outer layer later develops into the placenta, the umbilical cord, and the amniotic sac, and the inner layer develops into a new human being.
- About ten days after fertilization, the zygote becomes implanted in the uterine wall.

Period of the Embryo *(end of the second week to end of the second lunar month)*

- The embryo develops into a miniature human being.
- Major development occurs, in the head region first and in the extremities last. See Figure 2-5.
- All the essential features of the body, both external and internal, are established.
- The embryo begins to turn in the uterus, and there is spontaneous movement of the limbs.
- The placenta, the umbilical cord, and the amniotic sac develop; these protect and nourish the embryo.
- At the end of the second prenatal month, the embryo weighs, on the average, 1¼ ounces and measures in length 1½ inches.

Period of the Fetus *(end of the second lunar month to birth)*

- Changes occur in the actual or relative size of the parts already formed and in their functioning. No new features appear at this time.
- By the end of the third lunar month, some internal organs are well enough developed to begin to function. Fetal heartbeat can be detected by about the fifteenth week.
- By the end of the fifth lunar month, the different internal organs have assumed positions nearly like the ones they will have in the adult body.
- Nerve cells, present from the third week, increase rapidly in number during the second, third, and fourth lunar months. Whether or not this rapid increase will continue will depend upon conditions within the mother's body such as malnutrition, which adversely affects nerve-cell development—especially during the latter months of the prenatal period.
- Fetal movements usually appear first between eighteen and twenty-two weeks and then increase rapidly up to the end of the ninth lunar month when they slow down because of crowding in the amniotic sac and pressure on the fetal brain as the fetus takes a head-down position in the pelvic region in preparation for birth. These fetal movements are of different kinds—rolling and kicking and short or quick.
- By the end of the seventh lunar month, the fetus is well enough developed to survive, should it be born prematurely.
- By the end of the eighth lunar month the fetal body is completely formed, though smaller than that of a normal, full-term infant.

Origin of Attitudes

Attitudes toward children and parenthood are usually formed early in life, though they may crystallize when the individual knows that he or she will soon become a parent.

Many factors influence the formation of attitudes toward children. First, young people's earlier experiences with children have a marked effect on how they feel about them in general and about their own impending roles as parents. A woman, for example, who had to help care for younger brothers and sisters may have an unfavorable attitude toward children, or a woman who grew up as an only child may want many children to make up for the loneliness she felt when she was young.

Second, the experiences of friends, either in the past or at present, color the individual's attitudes. For example, a young man who hears his friends complain about the financial burdens of parenthood may decide that he would rather not have children.

Third, a parent or grandparent who loves children and who pities people who are childless can influence a person's attitudes favorably. Fourth, a person's attitude toward the sex of the unborn child can

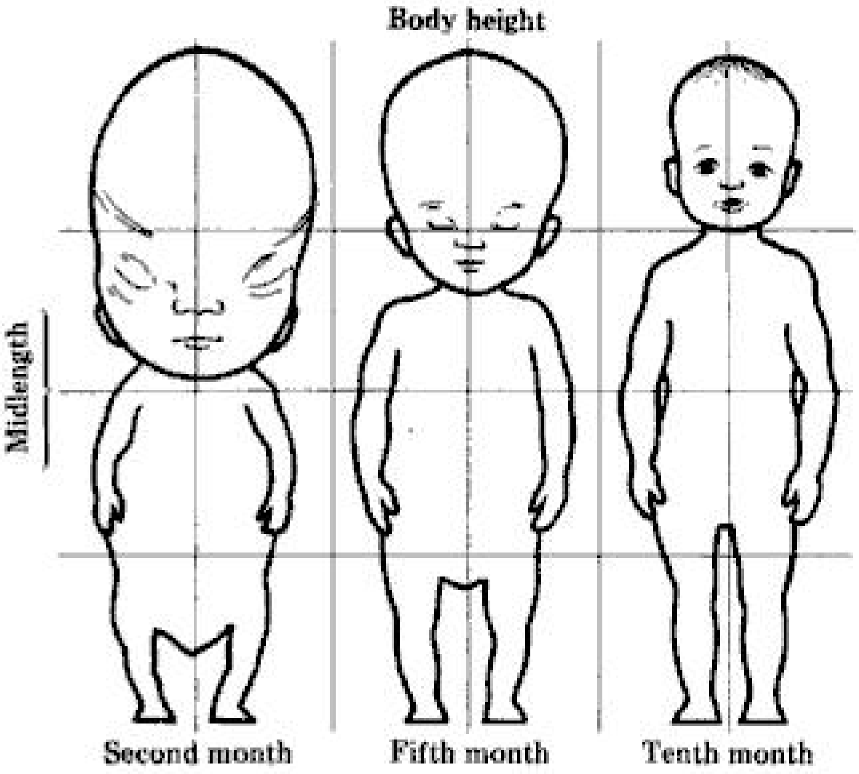


FIGURE 2-5 Body proportions at the end of different lunar months during the prenatal period. (Adapted from C. Murchison (Ed.). *A handbook of child psychology.* (2d ed.) Worcester, Mass.: Clark University Press, 1933. Used by permission.)

be influenced by stereotyped ideas—that boys are "a handful," for example.

Fifth, the mass media tend to glamorize family life and the parental role. The attitudes of an adult whose own experiences with children have been limited may be profoundly influenced by "family shows" on television.

Conditions Influencing Attitudes

Many conditions affect the attitudes—both favorably and unfavorably—of parents, siblings, and grandparents toward a child. The most commonly reported of these are summarized in Box 2-4.

A careful study of the conditions listed in this box will show that different conditions affect the attitudes of different significant people. For example, the attitudes of siblings are affected by conditions that are different from those of the mother or of the father or of the grandparents—just as the mother's attitudes are affected by conditions different from those of the father, of the siblings, or of the grandparents.

Persistence of Attitudes

Likes, dislikes, prejudices, and attitudes, once formed, tend to persist, though slight changes are possible. The changes that do occur are usually in the form of modifications of existing attitudes; these attitudes become less or more favorable than they originally were. Thus changes in attitudes are *quantitative* rather than *qualitative*. For example, a teenage boy's hero worship of a well-known football player may diminish when he discovers that his idol has faults not readily apparent at first. Similarly, a person's dislike for someone of a different race, religion, or socioeconomic background may mellow somewhat with personal contacts. Such changes are modifications of already-existing attitudes.

There are two reasons for persistence of attitudes. First, attitudes tend to persist because they are based on beliefs the individual considers to be valid and justified. After all, the hero-worshiping teenager contends, his idol certainly must be someone special if he has become a hero to others too.

Siblings and other significant people in the life of the unborn child have reasons for wanting or not wanting the child, and they consider these reasons valid. Hence their attitudes, like those of parents, tend to persist, though they too may be modified.

The second reason for the persistence of attitudes toward a child, formed before the child's birth, are that they are usually highly emotionally toned. And, like all emotional attitudes, they are difficult if not impossible to change. A woman, for example, who as a girl resented having to give up some of the time she wanted to spend with her friends to help with the care of younger siblings, is likely to resent being tied down again with the care of a child, even if it is her own.

Attitudes may appear to change, but there is evidence that they change far less than they may appear to on the surface (37,48,64). This is because most people try to cloak their own unfavorable attitudes toward their children when they realize that social attitudes toward them will be unfavorable if they express in words or actions their unfavorable attitudes toward their own children.

A man, for example, who is upset and resentful at the privations fatherhood brings, may and often will tell others that he is delighted at the prospects of having a child. At home, he may accuse his wife of "being careless" and allowing herself to become pregnant, but, to those outside the home, the camouflage of his true feelings will usually be adequate to make others believe that he is delighted at the prospect of becoming a father and, later, in his role of father.

BOX 2-4

CONDITIONS AFFECTING ATTITUDES OF SIGNIFICANT PEOPLE

Mother's Attitude

- Love of children
- Desire for companionship
- Desire to please her husband or improve a poor marital relationship
- Desire to be like her friends who have children
- Feelings of inadequacy for the parental role
- Resentment at having to give up a career
- Fear of childbirth or of having a defective child
- Resentment at the physical discomforts and weight gain associated with pregnancy
- Resentment at being overworked or tied down

Father's Attitude

- Desire for a son to carry on the family name or be associated with him in business
- A need to prove his virility to himself and others
- Feelings of inadequacy for the parental role
- Resentment at interference with educational or vocational plans
- Worry about the financial burdens of raising a child
- Resentment at being tied down

Siblings' Attitudes

- Desire for a playmate
- Desire to have as many siblings as their friends
- Fear of losing parental affection and attention
- Fear of having to share a room or toys with the new sibling or having to help care for it
- Desire for sympathy from friends who complain about their own siblings

Grandparents' Attitudes

- Desire for a grandchild to carry on the family name
- Love of children
- Desire to feel useful by helping care for the grandchild
- Fear of being imposed on for financial or other help

When parental attitudes, formed before the baby's birth, are favorable, they tend to be persistent after the baby's birth. This contributes to good parent-child relationships. (Photo by Erika Stone.)

To date, relatively few studies have been made of the persistence of attitudes toward family members, partly because of the problems inherent in making such studies—such as the difficulty of getting accurate reports of attitudes, especially when they are unfavorable—and partly because of the difficulty of following the same group of subjects for a long enough period of time to assess whether their attitudes have persisted or changed over a span of time.

A study by Schaefer and Bayley concentrated on the persistence of maternal behavior toward boys from birth through the preadolescent years. Because behavior is greatly influenced by attitudes, the results of this study help to throw light on the persistence of attitudes. These researchers reported little change in maternal behavior through the years, suggesting that attitudes likewise change little (64).

Effects of Attitudes on Children

The mother's attitude can have an effect on her unborn baby—not through the umbilical cord, which is the only direct connection between the two—but as a result of endocrine changes which can and do occur if the mother-to-be is subjected to severe and prolonged stress which normally accompanies persistently unfavorable attitudes. Favorable attitudes, by contrast, will lead to good body homeostasis and this will favor normal development during the prenatal period.

After birth, the mother's attitudes, most of which were formed before the baby's birth, have an influence because they are reflected in the way the child is treated. For example, a mother who wanted a boy will have a less favorable attitude toward a daughter. If she is disappointed in having a daughter, she may feel guilty and compensate for this by being overprotective and overindulgent of the child. If a later child should be the hoped-for son, either consciously or unconsciously she may show favoritism toward him, and her treatment of her daughter will be colored by rejection.

The attitudes of other family members—the father, siblings, and grandparents—can also affect the child. Before the child's birth they may affect it indirectly through the mother, for example, if family members let her know that they do not welcome the idea of its birth and thus cause her to become nervous and upset. By contrast, favorable attitudes on the part of other family members reinforce the mother's favorable attitudes or lessen any emotional stress she may be under if her own attitude is not favorable.

Like maternal attitudes, the attitudes of other family members tend to persist, though they may change slightly, depending partly on whether the child conforms to their expectations and partly on how he or she treats them. Grandparents, for example, may have favorable attitudes toward very young children but may feel differently about them if, as the children grow older, they treat their grandparents with less respect and less affection.

Effects of Attitudes on Family Relationships

The attitudes of different family members—the foundations of which have generally been laid before a child is born—have a profound influence not only on the child but also on family relationships. This influence may be favorable or unfavorable, depending not on the attitude of one family member but on the attitudes of *all* family members.

If favorable attitudes toward a new baby could be counted on to persist and if unfavorable attitudes could be counted on to become less unfavorable or even favorable, they would not represent a threat to family relationships. Unfortunately, favorable attitudes often become less favorable after the child's birth, and unfavorable attitudes tend to persist, even though they may be so cloaked that they appear to have changed for the better.

Sooner or later children become aware of the way different family members feel about them, and this influences their attitudes toward family members and toward themselves as well. Feeling loved and wanted will motivate a child to behave in a way that will intensify favorable family attitudes and relationships. If, on the other hand, children sense, suspect, or know that they are disappointments to their fathers, a burden to their already overworked mothers, and a nuisance to their siblings, they will show their resentment by behaving in ways that will intensify their unfavorable attitudes and worsen family relationships. This often is the starting point of personality maladjustments and problem behavior that can plague children for years—often throughout life.

HAZARDS DURING THE PRENATAL PERIOD

At no other time during the life span are there more serious hazards to development—or hazards of a more serious nature—than during the relatively short period before birth. These may be physical or psychological. Physical hazards have received more scientific attention because they are more easily recognized.

However, psychological hazards are sometimes as serious as physical hazards since they affect the attitudes of significant people toward the developing child. Furthermore, they often intensify physical hazards.

Physical Hazards

Each of the three major subdivisions of the prenatal period involves particular physical hazards.

While these do not affect all individuals by any means, they do occur with some frequency and can be serious enough to affect the development of the individual throughout life. Davis and Havighurst pointed out many years ago (19):

> *What happens to the fetus in the womb, and in the process of its birth; the adequacy of its uterine nutrition; its good or ill fortune at birth with regard to infection or injury, all these often prove as important as its heredity.*

Box 2-5 gives the common physical hazards associated with each of the prenatal periods.

Conditions Influencing Physical Hazards Certain conditions have been found to increase the likelihood that physical hazards will occur or accentuate them. The first of these conditions is the timing of their appearance. It has been recognized by doctors for many years that if the mother-to-be contracts rubella during the first trimester of pregnancy the chances of developmental irregularities in her unborn child, especially in the form of eye or ear defects or a malformation of the heart, will occur (15).

Heinonen et al. have reported that female hormones, such as estrogens and pregestens, when taken in the early stages of pregnancy may disturb the normal cardiovascular development of the fetus and cause congenital heart diseases. They report that the second and third lunar months, when the heart is developing rapidly, are the most serious times. This is not true if these hormones are taken after the fourth lunar month (32).

The second condition that increases the likelihood of physical hazards is if the condition is intense or greater than is normal. Some conditions that are known to affect the developing child during the prenatal period are described below; others are suspected of affecting development.

Maternal malnutrition can play havoc with normal development, especially the development of the fetal brain (49,53,55). Excessive smoking and drinking are detrimental to normal development, especially during the periods of the embryo and fetus (20,41,46). This is true also of taking drugs (16).

Maternal age has been reported to be a condition that intensifies the possibility of physical hazards during the prenatal period. The reason for this is that as women approach the menopause, they frequently have endocrine disorders which slow down the development of the embryo and fetus, causing such developmental irregularities as cretinism, Down's syndrome, heart malformations and hydrocephalus, all of which involve physical and mental defects. Figure 2-6 shows how the incidence of Down's syndrome increases as age advances in women. Older women also tend to have smaller babies and to have more complications at birth than do younger women (47, 53,68). While paternal age may likewise cause developmental irregularities or stillbirths, this is likely to happen only when paternal age is over sixty years (61,68).

Certain kinds of *work* are more likely to disturb the prenatal development than others. Chemicals and other hazards faced by women working in such places as hospitals, beauty parlors, and factories may be responsible for the increasing number of birth defects and miscarriages during recent years. As Burnham has pointed out, "The potential damage to the fetus and the possible genetic damage which may occur when pregnant women go to work appears to be an important medical problem" (13).

For reasons as yet unknown, *female* embryos have a better chance of survival than male embryos. For example, for every 100 females lost through mis-

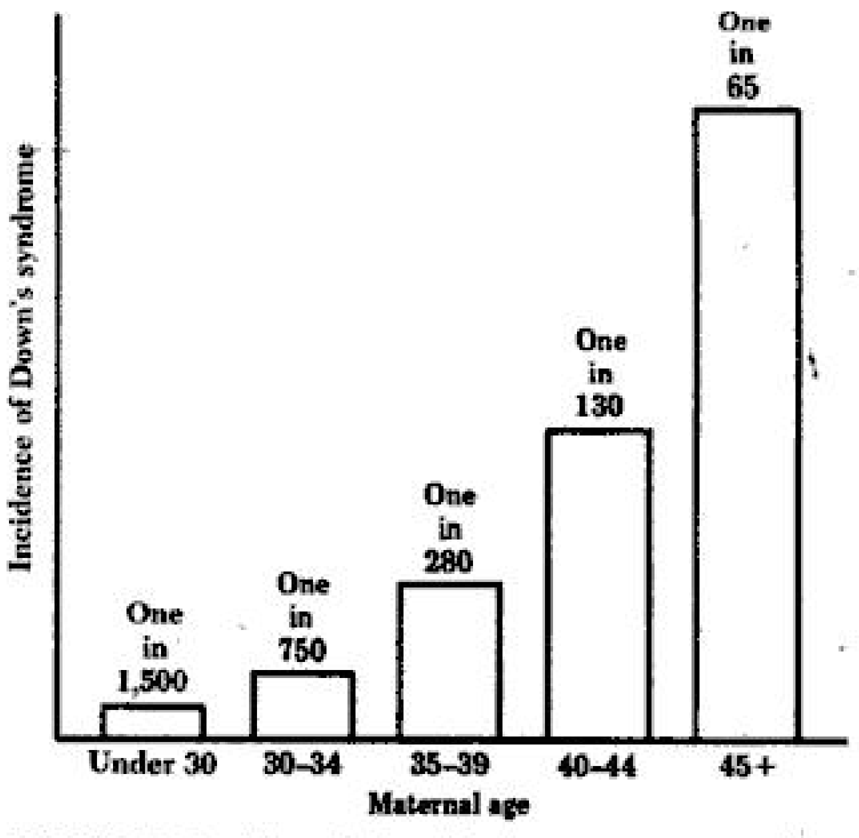


FIGURE 2-6 The relationship between maternal age and Down's syndrome. (Adapted from health statistics from the U.S. Department of Health, Education, and Welfare, Washington, D.C., 1978. Used by permission.)

BOX 2-5

COMMON PHYSICAL HAZARDS DURING THE PRENATAL PERIOD

Period of the Zygote

Starvation
The zygote will die of starvation if it has too little yolk to keep it alive until it can lodge itself in the uterine wall or if it remains too long in the tube.

Lack of Uterine Preparation
Implantation cannot occur if, as a result of glandular imbalance, the uterine walls are not prepared in time to receive the zygote.

Implantation in the Wrong Place
If the zygote becomes attached to a small fibroid tissue in the uterine wall or to the wall of the Fallopian tube, it cannot get nourishment and will die.

Period of the Embryo

Miscarriages
Falls, emotional shocks, malnutrition, glandular disturbances, vitamin deficiency, and serious diseases, such as pneumonia and diabetes, can cause the embryo to become dislodged from its place in the uterine wall, resulting in a miscarriage. Miscarriages that are due to unfavorable conditions in the prenatal environment are likely to occur between the tenth and eleventh weeks after conception.

Developmental Irregularities
Maternal malnutrition; vitamin and glandular deficiencies; excessive use of drugs, alcohol, and tobacco; and diseases, such as diabetes and German measles, interfere with normal development, especially that of the embryonic brain.

Period of the Fetus

Miscarriages
Miscarriages are always possible up to the fifth month of pregnancy; the most vulnerable time is when the woman's menstrual period would normally occur.

Prematurity
Fetuses who weigh less than 2 pounds 3 ounces have less chance of surviving than heavier fetuses and a greater chance of developing malformations.

Complications of Delivery
Maternal stress affects uterine contractions and is likely to lead to complications during birth.

Developmental Irregularities
Any of the unfavorable environmental conditions present during the period of the embryo will also affect the development of fetal features and retard the whole pattern of fetal development.

carriage, 160 males are lost. Developmental irregularities have also been found to be more common among males than among females (53,66).

Multiple births are more hazardous than single births. Fetuses of multiple birth are crowded during the prenatal period, and this inhibits the normal fetal activity essential for development. *Prematurity* is also more likely in the case of multiple births, as is the possibility of developmental irregularities. Because multiple births are more common among blacks than among whites, this may account in part for the higher infant mortality rate and the greater incidence of developmental irregularities among blacks than among whites (47,66).

Long-Term Effects If developmental irregularities are serious and if the embryo or fetus does not miscarry or die at birth or shortly afterward, the individual will be deformed in some way. One of the serious aspects of *developmental irregularities* is that they are sometimes not diagnosed as such until months or even years after birth. Epilepsy, cerebral palsy, and mental deficiency, for example, may not show up until babyhood or even early in childhood.

Parents who believe that their baby is normal at birth find it difficult to accept a defective child and often blame themselves for having caused the defect. This leads to strong feelings of guilt and a tendency to overprotect defective children or to refuse to accept the fact that they are as defective as they are.

It is now known that *malnutrition* during pregnancy may damage the developing fetal brain, causing learning difficulties in school, especially reading disabilities. Damage to the fetal brain, whatever the cause, will have effects on the individual's behavior that become more and more apparent as children grow older and are compared with other children of the same age (36,47).

A *chromosomal abnormality*, especially in an X chromosome, has been found to lead to physical abnormalities that can predispose the individual to abnormal behavior if they make it difficult for him or her to adjust to social expectations (11,23).

Studies of the early development of infants of *heroin-addicted mothers* have revealed that, up to the age of two years, their children show behavioral disturbances. How much longer these behavioral disturbances will persist has not yet been determined (82). The long-term effects of *maternal rubella* during pregnancy persist as shown by the fact that children with visual and hearing problems resulting from maternal rubella are delayed in reaching the normal developmental milestones at least until they are eight years old. How much longer this delay will persist has not yet been determined (15).

Studies of the long-term effects of *twinning* have revealed that prenatal crowding, which influences development during that time, carries over into postnatal life and affects patterns of personal and social adjustment (58). Because firstborn twins are likely to be bigger and stronger, they make better academic and social adjustments than their smaller, weaker twins. In addition, smaller twins tend to have lower IQs which account, in part, for their poorer academic performances (39,65). Twins are also usually born prematurely and suffer from the physical and psychological effects of prematurity, some of which are relatively short-lived while others persist throughout life. This will be discussed in detail in the following chapter.

There is no evidence, to date, that moderate *drinking* during pregnancy will have a long-term effect on the developing child; however, excessive drinking that is not decreased after the woman discovers that she is pregnant can have an effect (41) There is, on the other hand, evidence that excessive *smoking*, unless drastically reduced, does have long-term harmful effects (46).

Excessive smoking, not determined in terms of number of cigarettes smoked but rather in terms of nervousness, wakefulness, and irregular maternal heartbeat, has been shown to have some effect on the fetal heart and circulatory systems as well as on other organs. In the early months of life, mortality is greater and average body weight less for babies of mothers who smoke excessively. To date, there is no evidence of what, if any, long-term effects excessive maternal smoking has on children's intelligence (33,46). In a study of five- to eight-year-olds, children whose mothers smoked excessively during pregnancy were reported to be more hyperactive than children whose mothers smoked moderately or not at all, suggesting that maternal smoking during the prenatal period may be an important contributor to the hyperkinetic syndrome (20).

By the time they are seven years old, children whose mothers smoked excessively during pregnancy have been found to be shorter and generally less well developed than the mean for their age. This is illustrated in Figure 2-7. In addition, they are less well adjusted socially and read less well than children born to nonsmoking or moderately smoking mothers (8,28, 46).

Attempts to Cope with Developmental Irregularities Today two approaches are being used to deal with developmental irregularities. The first consists of *genetic counseling*. This involves a comprehensive and detailed study of the medical history of both the husband and wife to determine if, when, and in what form physical or mental abnormalities have existed in their families. If there are other children already in the family, their medical histories are also studied.

If a study of the medical histories shows or suggests that there is some genetic abnormality in the families of either the husband or the wife, or if another child in the family has some condition stemming from heredity rather than from environmental experiences, the parents are informed of the possibility of having a defective child and are advised to use birth-control techniques to prevent pregnancy. If pregnancy has already begun, they are advised to consider abortion.

The second approach to dealing with developmental irregularities is to use *amniocentesis* if the medical history of a couple suggests the possibility of genetic irregularities or if conditions during pregnancy suggest that the developing fetus may not be normal.

Amniocentesis is a medical procedure which involves the withdrawal of a sample of amniotic fluid from the uterus of a pregnant woman with a needle inserted in the abdomen and guided by ultrasound to ensure that it will not penetrate the body of the developing fetus. The withdrawn fluid contains cells that have been shed by the developing fetus, and

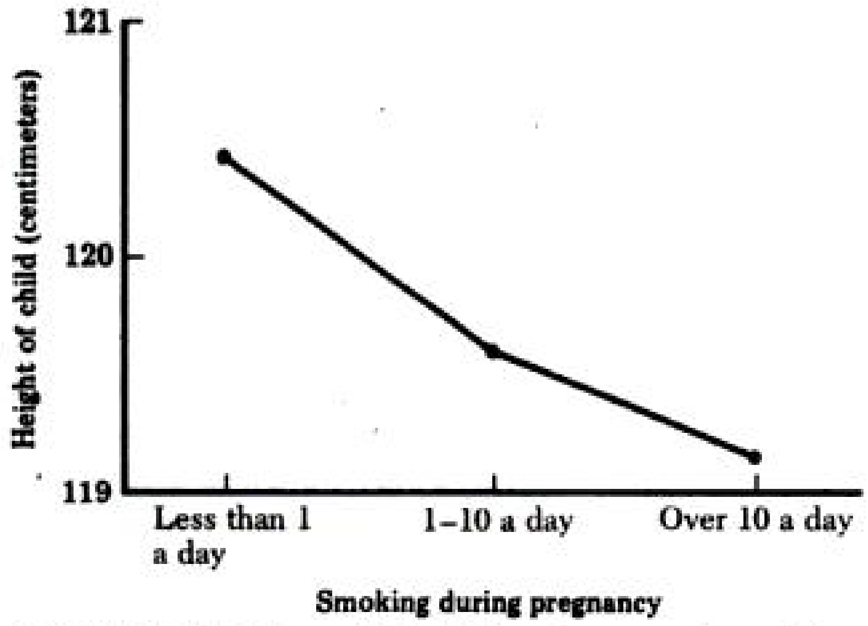


FIGURE 2-7 The relationship of maternal smoking during pregnancy and the height of children up to seven years of age: mean scores for a group of boys and girls. (Adapted from H. Goldstein. Factors influencing the height of seven-year-old children: Results of the National Child Development Study. *Human Biology,* 1971, **43,** 92–111. Used by permission.)

these are then tested for biochemical and chromosomal defects. To date, amniocentesis is the most accurate test to determine the sex of the unborn child though it is rarely used for that purpose.

If tests confirm the geneticist's suspicion that the child will be defective, abortion is usually advised. Amniocentesis is the most accurate test available today to predict any physical or mental abnormalities before birth, and it is being more widely used every year. However, because it is a procedure that can damage the developing fetus or bring on a miscarriage if not properly used, and because relatively few doctors at present are trained in its use, amniocentesis is limited to cases where there is evidence that the child-to-be may be defective. As its use increases, the number of children born with physical or mental defects will, unquestionably, decrease (27).

Psychological Hazards

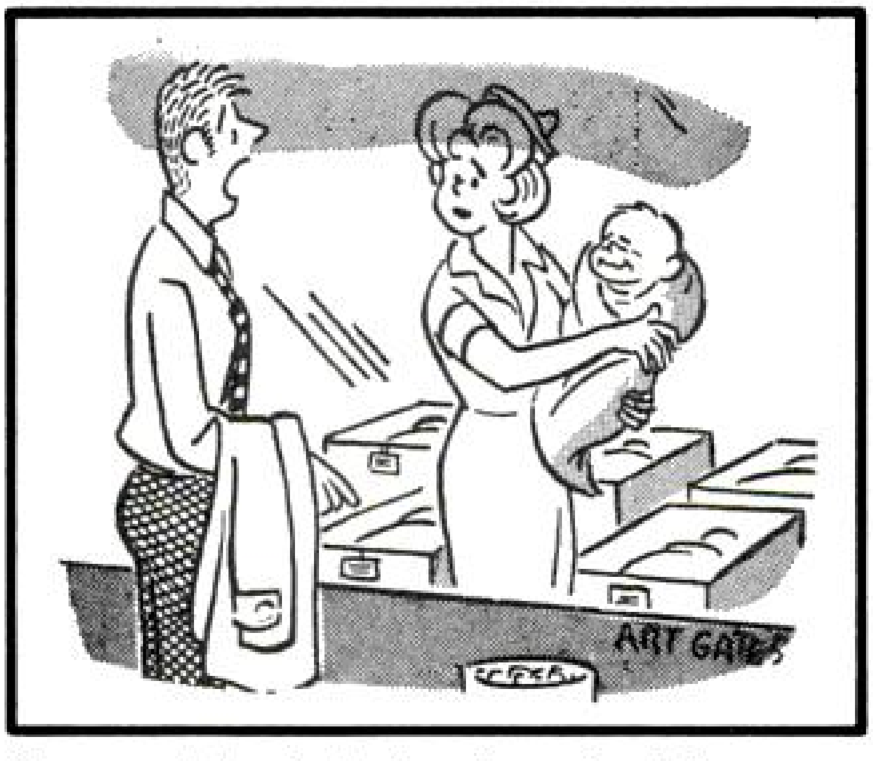
Like the physical hazards associated with the prenatal period, the psychological hazards can have persistent effects on the individual's development and can influence the postnatal environment and the treatment the child receives from significant people during the early, formative years. The three most important psychological hazards are traditional beliefs about prenatal development, maternal stress during the prenatal period, and unfavorable attitudes toward the unborn child on the part of people who will play significant roles in the child's life.

Traditional Beliefs Perhaps there are more traditional, and more damaging, beliefs about the prenatal developmental period than about any other period in the life span. Such beliefs can and do affect parents' treatment of their children and often have an effect on their attitudes toward each other. See Figure 2-8.

In spite of scientific evidence to the contrary, many people, for example, still believe that it is within their power to control the sex of their offspring. They believe they can do this by intercourse at certain periods during the menstrual cycle, by producing an acid environment in the woman's reproductive organs if a girl is desired and an alkaline environment for a boy, or by artificial insemination after chemically abstracting sperm cells that would produce a child of the desired sex and then implanting them in the woman's reproductive organs (14).

The effects of such a belief are more serious than most people realize. When parents are convinced that they can produce an offspring of the sex

FIGURE 2-8 Acceptance of the traditional belief that the mother's behavior during pregnancy will affect the child's development often leads to husband-wife conflicts. (Drawn by Art Gates. *Atlanta Journal & Constitution,* Oct. 28, 1973. Used by permission.)



"I warned Janet about eating all of those sour pickles!"

they want, they are generally bitterly disappointed when the child turns out to be of the opposite sex. This disappointment may wane and disappear in time, but it frequently leaves its imprint upon the parents' attitudes toward the child. Furthermore, many men feel that it is the woman who has the power to control the sex of the child, and if she does not produce an offspring of the sex her husband wants, his attitude toward her may be seriously affected.

Traditional beliefs about how one can predict the sex of an unborn child likewise lead to resentments and disappointments which are reflected in unfavorable attitudes toward the child, often persisting throughout its life. If, for example, it is believed that doctors can predict with 100 percent accuracy the sex of the unborn child by the heart-beat test or the saliva test, parents are often bitterly disappointed when the child does not turn out to be of the predicted sex. To date, the only known way to predict with high accuracy the sex of an unborn child is by amniocentesis (14).

There are also traditional beliefs about the causes of developmental irregularities. Some of these emphasize heredity, but most stress the role played by maternal impressions. There are two lines of medical evidence to disprove these beliefs about maternal impressions. First, there is evidence that the same types of abnormalities found in humans are also found in the lower animals whose low level of mental development would make them incapable of maternal impressions. Second, there is no direct nervous connection between the mother and the embryo. There are no nerves in the umbilical cord, and thus the mother's thoughts, feelings, and emotions could have no direct influence on the embryo.

Acceptance of these beliefs can lead to strong feelings of guilt on the part of the mother, resentments toward her on the part of the father, and a tendency for the mother to overprotect the child as a form of compensation for the harm she believes she has caused. The more handicapped a child is by a developmental irregularity, the more unfavorable these feelings and attitudes will be.

In the past, *twins* were believed to be caused by evil spirits and thus were feared and rejected by the social group. Today, only the most uncivilized cultures hold such beliefs, although many people still think that it is "animal-like" to have twins and that twins are less desirable and less acceptable than singletons.

Such unfavorable beliefs will inevitably color the attitudes of family members and also of significant outsiders toward twins. For example, if parents believe that twins always cause trouble in terms of work, expense, family friction, or unfavorable attitudes on the part of relatives, friends, and neighbors, their attitudes toward their twins and their treatment of them will be less favorable than if they were uninfluenced by such beliefs (39,65).

Maternal Stress The second important psychological hazard associated with the prenatal period is maternal stress—heightened general emotionality over a prolonged period of time. Stress can be the result of fear, anger, grief, jealousy, or envy.

There are many causes of maternal stress during pregnancy, the most common of which are the following: not wanting a child because of marital or economic difficulties or because having a child will interfere with educational or vocational plans; physical discomforts that are severe and frequent enough to make the mother-to-be nervous, irritable, and generally emotionally disturbed; feelings of inadequacy for the parental role; and fears that the child will be physically deformed or mentally deficient—fears that are often heightened by mass-media reports of the frequency of birth defects and of specific causes of birth defects, such as rubella and thalidomide. Some women have fantasies and dreams about giving birth to deformed babies which intensify such fears (26).

Maternal stress affects the developing child both before and after birth. Before birth, severe and persistent glandular imbalance due to stress may result in irregularities in the developing child and complications of delivery or even prematurity. Maternal anxiety affects uterine contractions, with the result that labor lasts longer than normal and the chances of complications are greater because the infant must often be delivered by instruments. Furthermore, anxiety often leads to overeating and excessive weight gain in pregnancy, which further complicates birth.

Sporadic, less severe maternal stress is less likely to lead to developmental irregularities, though it does increase fetal activity. If this increase is slight, the effect is favorable because the fetus will get the exercise necessary for healthy muscular development. If stress leads to excessive fetal activity, how-

BOX 2-6

SOME COMMON UNFAVORABLE ATTITUDES TOWARD AN UNBORN CHILD

Not Wanting the Child

The mother may not want the child because it is illegitimate, because it will interfere with her career, because it will tie her down, or because she is already overworked caring for other children. The father may not want the child because he does not want to be forced to marry the mother, because of the financial burden the child will represent, because he does not want to be tied down, or because he does not want his wife to be preoccupied with child care and neglect him. Siblings may not want the child because they resent the restrictions a baby will place on their activities or because they do not want to share their possessions or their mother's time and attention with the new baby.

Not Wanting the Child at This Time

The parents may not want the child now because it will interfere with their educational and vocational plans, because they feel they are too young and inexperienced to care for a child, because they cannot afford it, or because they do not want to assume parental responsibilities so soon. Grandparents may feel that the young couple cannot afford the baby and may fear that they will have to provide financial and other help.

Preference for a Child of a Particular Sex

The father and the grandparents usually want the firstborn to be a boy; if there are already boys in the family, they may want a girl. The mother may want a boy to please her husband, or she may prefer a girl, who she feels will be more of a companion to her. Siblings generally prefer a child of their own sex, whom they regard as more likely to be a playmate.

Dream-Child Concept

All family members have a dream-child concept that colors their attitudes toward the unborn baby. Parents and grandparents want the baby to be perfect mentally, emotionally, and physically—bright, obedient, beautiful—and siblings want an ideal playmate, one who will do whatever *they* want to do and who will never rival or outstrip them.

Not Wanting Children of Multiple Birth

Many adults, even today, regard multiple births as animal-like or accept the traditional belief that children of multiple birth are doomed to be physical and mental weaklings. Others believe that multiple-birth children make too much work for all family members and dread the added expense for hospital care which is inevitable if they are premature. These unfavorable attitudes are intensified if conditions after birth are similar to those they dreaded before birth.

Wanting to Have a Miscarriage or an Abortion

When a baby is unwanted, regardless of the reason, some women hope they will have a miscarriage or they plan an abortion. If the developing baby's life is ended, either by miscarriage or abortion, women often feel guilty and this unfavorable attitude carries over to any children they may have in the future. Should they decide against an abortion or should there be no miscarriage, they may feel guilty and express their guilt in overprotectiveness and overindulgence of the child they had hoped not to have.

Scorn for the Child

Relatives, friends of the family, and neighbors may have an unfavorable attitude toward the child-to-be because it is illegitimate, because of some stigma in the lives of one or both parents, or because it is the child of an interracial or interreligious marriage. As a result, the parents may become defensive and treat the child in an overprotective or overindulgent way to compensate for these unfavorable attitudes or they may reject the child because they feel embarrassed and ashamed.

BOX 3-2

ADJUSTMENTS OF INFANCY

Temperature Changes

There is a constant temperature of 100°F in the uterine sac, while temperatures in the hospital or home may vary from 60 to 70°F.

Breathing

When the umbilical cord is cut, infants must begin to breathe on their own.

Sucking and Swallowing

The infant must now get nourishment by sucking and swallowing, instead of receiving it through the umbilical cord. These reflexes are imperfectly developed at birth, and the infant often gets less nourishment than is needed and thus loses weight.

Elimination

The infant's organs of elimination begin to work soon after birth; formerly, waste products were eliminated through the umbilical cord.

Infancy Is a Hazardous Period

Infancy is a hazardous period, both physically and psychologically. Physically, it is hazardous because of the difficulties of making the necessary radical adjustments to the totally new and different environment. The high infant mortality rate is evidence of this.

Psychologically, infancy is hazardous because it is the time when the attitudes of significant people toward the infant are crystallized. Many of these attitudes were established during the prenatal period and may change radically after the infant is born, but some remain relatively unchanged or are strengthened, depending on conditions at birth and on the ease or difficulty with which the infant and the parents adjust.

MAJOR ADJUSTMENTS OF INFANCY

Infants must make four major adjustments before they can resume their developmental progress. If they do not make them quickly, their lives will be threatened. While these adjustments are being made, there is no developmental progress. Instead, the infant remains on a plateau or may even regress to a lower stage of development. These adjustments are described in Box 3-2.

BOX 3-3

INDICATIONS OF THE DIFFICULTY OF ADJUSTMENT TO POSTNATAL LIFE

Loss of Weight

Because of difficulties in adjusting to sucking and swallowing, the newborn infant usually loses weight during the first week of postnatal life.

Disorganized Behavior

For the first day or two of postnatal life, all infants show relatively disorganized behavior, such as irregularities in breathing rate, frequent urinations and defecations, wheezing, and regurgitation. This is due partly to pressure on the brain during birth, which results in a stunned state, and partly to the undeveloped state of the autonomic nervous system, which controls body homeostasis.

Infant Mortality

Even today, the rate of infant mortality during the first two days of postnatal life is high. The causes of infant mortality are many and varied.

Every newborn infant finds adjustment to postnatal life difficult at first. Some have trouble adjusting to temperature changes and develop colds, which may turn into pneumonia. Others find breathing difficult and must be given oxygen. Most choke when they attempt to suck and swallow, and many regurgitate more than they are able to retain, in which case they get less nourishment than they need to grow or even to retain their birth weight. Few have any real trouble eliminating urine, but many have difficulties with fecal elimination.

Three common indications of the difficulty of adjusting to postnatal life are given in Box 3-3.

CONDITIONS INFLUENCING ADJUSTMENT TO POSTNATAL LIFE

Many conditions influence the success with which infants make the necessary adjustments to postnatal life.

they are dissonant, behavioral problems are almost sure to ensue" (105).

As early as the neonatal period, a number of factors influence the infant's developing personality. A disturbed prenatal environment, which can result if the mother is subjected to severe or prolonged stress, for example, may cause a modification of the newborn infant's behavior pattern. Such disturbances are especially important if they occur during the latter part of intrauterine life and may cause a state of hyperactivity and irritability in the newborn (92).

There is little evidence that the *birth trauma*, or psychological shock that results when the infant is separated from the mother, has any lasting effects on personality, as Rank claimed (79). There is evidence, however, that infants who are separated from their mothers after birth do not make as good an adjustment to postnatal life as infants who remain with their mothers (114).

There is also evidence that mothers' attitudes toward their infants, which are reflected in their behavior, influence the development of the infants' personalities. For example, if a mother suspects that there is something the matter with the infant, her reaction is likely to be confused and unstable, shifting from day to day or even from hour to hour.

HAZARDS OF INFANCY

In spite of its short duration, infancy is one of the most hazardous periods in the life span. Hazards at this time may be physical, psychological, or both, and they can affect both present and future adjustment. In the case of the plateau in development, the physical adjustments may take place too slowly, thus threatening the infant's life. Psychologically, this plateau is hazardous because it may cause parents to become anxious and fearful about the infant's development, feelings that can persist and lead to overprotectiveness in later years.

Physical Hazards

Some of the physical hazards of infancy are of only temporary significance, while others can affect the individual's entire life pattern. The most serious physical hazards are those relating to an unfavorable prenatal environment, a difficult and complicated birth, a multiple birth, postmaturity, and prematurity, and conditions leading to infant mortality.

Unfavorable Prenatal Environment As a result of unfavorable conditions in the prenatal environment, the infant may have difficulty adjusting to postnatal life. Excessive smoking on the part of the mother, for example, can affect the development of the fetus. Prolonged and intense maternal stress is another important factor, causing the infant to be tense and nervous (60,92).

Difficult and Complicated Birth As was stressed earlier, a difficult or complicated birth frequently results in temporary or permanent brain damage. If the birth requires the use of instruments, as in the case where the fetus is so large that it has to be aided in its passage down the birth canal or if the fetus lies in a foot-first or a transverse position, the chances of brain damage from the use of instruments to aid delivery are always present.

A caesarean section or a precipitate birth, on the other hand, is likely to result in anoxia, a temporary loss of oxygen to the brain. If anoxia is severe, the brain damage will be far greater than if anoxia lasts for only a few seconds. The more complicated the birth and the more damage there is to the brain tissue, the greater the effect on the infant's postnatal life and adjustments.

Severe and persistent brain damage will have adverse effects on all adjustments during infancy and often into childhood or even throughout life. The effects of brain damage are most frequently shown in uncoordinated behavior, hyperactivity, learning difficulties, and emotional problems (72,80).

Multiple Birth Children of multiple birth are usually smaller and weaker than singletons as a result of crowding during the prenatal period, which inhibits fetal movements. These babies tend to be born prematurely, which adds to their adjustment problems.

Postmaturity Postmaturity is hazardous only when the fetus becomes so large that the birth requires the use of instruments or surgery, in which case the hazards are due to the conditions associated with birth rather than to postmaturity per se. One study of babies born more than three weeks after term reported that they experienced neonatal adjustment problems and were also socially maladjusted and required special schooling by the age of seven (92).

Prematurity Prematurity causes more neonatal deaths than any other condition. This will be dis-

infants through the way mothers handle them and this affects their postnatal adjustments.

The helplessness of the newborn is more of a psychological hazard in the case of firstborns than of later-born children. By the time parents have had several children, they accept the helplessness of the newborn in a more relaxed way and are not so likely to be disturbed by it as they are for the firstborn infant. Only if the helplessness comes from some unusual condition or is more pronounced than is normal are parents then likely to be concerned. If, for example, a third or fourth child is more helpless than earlier-born siblings because of prematurity, multiple birth, injury during the birth process, or any other cause, parents tend to worry, especially if the infant must have special nursing care in the hospital or remain there longer than the usual time.

Individuality of the Infant To most adults, being different is interpreted as being inferior. When parents steep themselves in child-care literature before the arrival of their first child, or when they set up norms of behavior based on what their earlier-born children did at different ages, they tend to judge a newborn infant in these terms.

If parents remember their earlier-born children as crying very little at night after being taken home from the hospital or having little difficulty in nursing or keeping down their nourishment, they will be concerned if the new infant experiences feeding difficulties or cries every night without apparent reason.

Parental concern is then expressed in their treatment of the infant. This, in turn, affects the infant's adjustments to postnatal life and tends to increase the severity of the problems that concerned the parents. Under such conditions, the infant's individuality becomes a psychological hazard which, unless parents accept individuality as normal, will play havoc with the adjustments made not only during infancy but also as childhood progresses.

Developmental Lag Some infants lag behind the norm in their development during the infancy period. Instead of regaining lost birth weight by the end of the first week or sooner, they may continue to lose weight or rest on a plateau with no improvement at all. Even worse, they may show such a pronounced lag that instead of being allowed to go home with their parents three to four days after birth, as is usual, they are kept in the hospital and may even have to have special nursing care.

The infants most likely to show developmental lag are those born prematurely or those who were injured at birth. Even a healthy, full-term infant may show developmental lag should there be some minor and temporary illness or should the mother's milk be inadequate and the formula substituted not be suited to the infant's needs.

Regardless of the cause of developmental lag, it is always a source of concern to parents and, as such, affects the way they handle the infant's needs. An anxious, concerned mother will transmit her anxiety by the way she takes care of the infant. Feeling that the infant is too delicate to be handled any more than is absolutely essential, the mother will not stimulate the infant by talking to it, by picking it up and rocking it, or by exercising the arms and legs regularly at different times during the day. Lack of stimulation intensifies the developmental lag and this, in turn, intensifies the unfavorable parental attitudes. Thus a vicious circle is set in motion and the infant becomes the innocent victim.

Plateau in Development Even though a plateau in development is normal immediately after birth, many first-time parents are unaware of this. As a result, they are concerned when their baby seems to be making no progress. Their concern is heightened if the baby regresses from the plateau and has difficulty in keeping down what little nourishment is taken, thus dropping below birth weight.

Should the plateau last only a few days, parental concern wanes and gives way to confidence that all is well. However, it often leaves some psychological obstacles, three of which are common and serious. First, it makes parents believe their infant is delicate and, as a result, should have extra care and attention. This encourages overprotectiveness which, once developed, often persists as a habit. Second, it weakens parents' confidence in their ability to assume full care of the infant after leaving the hospital. If by then the infant has not regained lost birth weight, this lack of confidence is greatly increased. And third, parents feel that they must handle the infant as little as possible and with great care to prevent further loss of weight or failure to gain weight. As a result, they deprive the infant of one of the essentials of development, stimulation of the different areas of the body.

istered during labor and delivery on the behavior of the newborn: A review. *Merrill-Palmer Quarterly*, 1974, **20**, 121–141.

3. Aleksandrowicz, M. K., and D. R. Aleksandrowicz. "Obstetrical pain-relieving drugs as predictors of infant behavior variability": A reply to Federman and Yang's critique. *Child Development*, 1976, **47**, 297–298.

4. Allen, L.; L. Brow, L. Dickinson, and K. C. Pratt. The relation of first-name preference to the frequency in the culture. *Journal of Social Psychology*, 1941, **14**, 279–293.

5. Ashton, R. The influence of state and prandial condition upon the reactivity of the newborn to auditory stimulation. *Journal of Experimental Child Psychology*, 1973, **15**, 315–337.

6. Bagg, C. E., and T. G. Crookes. The responses of neonates to noise, in relation to the personalities of their parents. *Developmental Medicine & Child Neurology*, 1975, **17**, 732–735.

7. Bailar, J., and J. Gurian. The medical significance of date of birth. *Eugenics Quarterly*, 1967, **14**, 89–102.

8. Baird, D. Perinatal mortality. *Developmental Medicine & Child Neurology*, 1970, **12**, 368–369.

9. Bakeman, R., and J. V. Brown. Behavioral dialogues: An approach to the assessment of mother-infant interaction. *Child Development*, 1977, **48**, 195–203.

10. Bell, R. Q., G. M. Weller, and M. F. Waldrop. Newborn and preschooler: Organization of behavior and relations between periods. *Monographs of the Society for Research in Child Development*, 1971, **36**(1 and 2).

11. Bowes, W. A., Y. Brackbill, E. Conway, and A. Steinschneider. The effects of obstetrical medication on fetus and infant. *Monographs of the Society for Research in Child Development*, 1970, **35**(4).

12. Burke, P. M. Swallowing and the organization of sucking in the human newborn. *Child Development*, 1977, **48**, 523–531.

13. Burnham, D. Rise in birth defects laid to job hazards. *The New York Times*, March 14, 1976.

14. Busse, T. V., and J. Helfrich. Changes in first-name popularity across grades. *Journal of Psychology*, 1975, **89**, 281–283.

15. Busse, T. V., and L. Seraydarian. Desirability of first names, ethnicity, and parental education. *Psychological Reports*, 1977, **40**, 739–742.

16. Caputo, D. V., and W. Mandell. Consequences of low birth weight. *Developmental Psychology*, 1970, **3**, 363–383.

17. Caputo, D. V., H. B. Taub, K. M. Goldstein, N. Smith, J. D. Daladck, J. P. Pursner, and R. M. Silberstein. An evaluation of various parameters of maturity at birth as predictors of development at one year of life. *Perceptual & Motor Skills*, 1974, **39**, 631–652.

18. Condon, W. S., and L. W. Sander. Neonate movement as synchronized with adult speech: Interactional participation and language acquisition. *Science*, 1974, **183**, 99–101.

19. Cornell, E. H., and A. W. Gottfried. Intervention with premature human infants. *Child Development*, 1976, **47**, 32–39.

20. Coursin, D. B. Nutrition and brain development in infants. *Merrill-Palmer Quarterly*, 1972, **18**, 177–202.

21. Cronenwett, L. R., and L. L. Newmark. Fathers' responses to childbirth. *Nursing Research*, 1974, **23**, 210–217.

22. Cruise, M. O. A longitudinal study of the growth of low-birth-weight infants: Velocity and distance growth, birth to 3 years. *Pediatrics*, 1973, **51**, 620–628.

23. Darden, D. K., and I. E. Robinson. Mulitdimensional scaling of men's first names: A sociolinguistic approach. *Sociometry*, 1976, **39**, 422–431.

24. Davies, P. A. Low-birth-weight infants: Neurological sequelae and later intelligence. *British Medical Bulletin*, 1975, **31**, 85–91.

25. Davies, P. A., and J. P. M. Tizard. Very low-birth-weight and subsequent neurological defect (with special reference to spastic diplegia). *Developmental Medicine & Child Neurology*, 1975, **17**, 3–17.

26. Desor, J. A., O. Maller, and R. E. Turner. Taste in acceptance of sugars by human infants. *Journal of Comparative & Physiological Psychology*, 1973, **84**, 496–501.

27. De Souza, S. W., R. J. John, B. Richards, and R. D. G. Milner. Fetal distress and birth scores in newborn infants. *Archives of Disease in Childhood*, 1975, **50**, 920–926.

28. Dittrichová, J., K. Paul, and J. Vondrâcek. Individual differences in infants' sleep. *Developmental Medicine & Child Neurology*, 1976, **18**, 182–188.

29. Eastman, N. J., and L. M. Hellman. *Williams obstetrics*. 13th ed. New York: Appleton-Century-Crofts, 1966.

30. Emde, R. N., T. J. Gaensbaner, and B. H. Suzuki. Quiet sleep and indices of maturation in the newborn. *Perceptual & Motor Skills*, 1973, **36**, 633–634.

31. Engen, T., L. P. Lipsitt, and M. B. Peck. Ability of newborn infants to discriminate sapid substances. *Developmental Psychology*, 1974, **10**, 741–744.

32. Fantz, R. L., and S. B. Miranda. Newborn infant attention to form of contour. *Child Development*, 1975, **46**, 224–228.

33. Federman, E. J., and R. K. Yang. A critique of "obstetrical pain-relieving drugs as predictors of infant behavior variability." *Child Development*, 1976, **47**, 294–296.

34. Fitzgerald, H. E., and S. W. Porges. A decade of infant conditioning and learning research. *Merrill-Palmer Quarterly*, 1971, **17**, 79–119.

35. Flaste, R. When that baby comes, what's in a name? *The New York Times*, Feb. 4, 1977.

36. Francis-Williams, J., and P. A. Davies. Very low-birth-weight and later intelligence. *Developmental Medicine & Child Neurology*, 1974, **16**, 709–728.

37. Gardner, R. W. Individuality in development. In W. R. Looft (Ed.), *Developmental psychology: A book of readings*. Hinsdale, Ill.: Dryden Press, 1972, Pp. 402–414.

38. Goggin, J. E., G. E. Holmes, K. Hassanein, and S. B. Lansky. Observations of postnatal development activity in infants with fetal malnutrition. *Journal of Genetic Psychology*, 1977, **132**, 247–253.

39. Gottfried, A. W. Intellectual consequences of perinatal anoxia. *Psychological Bulletin*, 1973, **80**, 231–242.

40. Greenberg, M., and N. Morris. Engrossment: The newborn's impact upon the father. *American Journal of Orthopsychiatry*, 1974, **44**, 520–531.

41. Greenberg, M., I. Rosenberg, and J. Lind. First mother's rooming-in with their newborns: Its impact upon the mother. *American Journal of Orthopsychiatry*, 1973, **43**, 783–788.

42. Harari, H., and J. W. McDavid. Name stereotypes and teachers' expectations. *Journal of Educational Psychology*, 1973, **65**, 222–225.

43. Hardy, J. B. Birth weight and subsequent physical and intellectual development. *New England Journal of Medicine*, 1973, **289**, 973–974.

44. Hartman, A. A., R. C. Nicolay, and J. Hurley. Unique personal names as a social adjustment factor. *Journal of Social Psychology*, 1968, **75**, 107–110.

Babyhood occupies the first two years of life following the brief two-week period of infancy. While babyhood is often referred to as infancy, the label *babyhood* will be used in this book to distinguish it from the extreme helplessness characteristic of the immediate postnatal period.

During the babyhood months, there is a gradual but pronounced decrease in helplessness. This does not mean that helplessness quickly disappears and is replaced by independence. Instead, it means that every day, week, and month the individual becomes more independent so that, when babyhood ends with the second birthday, the individual is a quite different person than when babyhood began.

Because "baby" suggests to many people a helpless individual, it is becoming increasingly common to apply the label *toddler* to the individual during the second year of babyhood. A toddler is a baby who has achieved enough body control to be relatively independent. See Figure 4-1.

CHARACTERISTICS OF BABYHOOD

Certain characteristics of babyhood, while similar to characteristics of other periods in the life span, are of particular importance during the babyhood years. They distinguish babyhood from the periods preceding it and those that follow it. Following are the most important characteristics.

Babyhood is the True Foundation Age

While the whole of childhood, but especially the early years, are generally regarded as the *foundation age*, babyhood is the true foundation period of life because, at this time, many behavior patterns, many attitudes, and many patterns of emotional expression are being established.

Early scientific interest in the importance of these foundations came from the work of Freud, who maintained that personality maladjustments in adulthood had their origins in unfavorable childhood experiences (44). Erikson also contended that "childhood is the scene of man's beginning as man, the place where our particular virtues and vices slowly but clearly develop and make themselves felt." According to Erickson, how babies are treated will determine whether they will develop "basic trust" or "basic distrust"—viewing the world as safe, reliable, and nurturing or as full of threat, unpredictability, and treachery (38). White contends that the first two years are critical in setting the pattern for personal and social adjustments. As he has pointed out, "Providing a rich social life for a twelve- to fifteen-month-old child is the best thing you can do to guarantee a good mind" (117).

There are four reasons why foundations laid during the babyhood years are important. First, contrary to tradition, children do not outgrow undesirable traits as they grow older. Instead, patterns established early in life persist regardless of whether they are good or bad, harmful or beneficial. Second, if an undesirable pattern of behavior or unfavorable beliefs and attitudes have started to develop, the sooner they can be corrected the easier it will be for the child. Third, because early foundations quickly develop into habits through repetition, they will have a lifelong influence on a child's personal and social adjustments. And, fourth, because learning and experience play dominant roles in development, they can be directed and controlled so that the development will be along lines that will make good personal and social adjustments possible.

Babyhood Is an Age of Rapid Growth and Change

Babies grow rapidly, both physically and psychologically. With this rapid growth comes a change not only in appearance but also in capacities. Babies gradually become less top-heavy than they were at birth and their limbs develop in better proportion to the large head. Changes in body proportions are accompanied by growth in height and weight. While growth is rapid during the entire babyhood period, it is especially so during the first year of babyhood (64).

Intellectual growth and change parallel physical growth and change. Perhaps in no area is change more apparent than in the baby's ability to recognize and respond to people and objects in the environment. Before babyhood has come to an end, babies are able to understand many things and can communicate their needs and wants in ways that others can understand.

Babyhood Is an Age of Decreasing Dependency

The decrease in dependency on others results from the rapid development of body control which

BOX 4-1

PATTERN OF PHYSICAL DEVELOPMENT DURING BABYHOOD

Weight

At the age of four months, the baby's weight has normally doubled. At one year, babies weigh, on the average, three times as much as they did at birth, or approximately 21 pounds. At the age of two, the typical American baby weighs 25 pounds. Increase in weight during babyhood comes mainly from an increase in fat tissue.

Height

At four months, the baby measures between 23 and 24 inches; at one year, between 28 and 30 inches; and at two years, between 32 and 34 inches.

Physical Proportions

Head growth slows down in babyhood, while trunk and limb growth increases. Thus the baby gradually becomes less top-heavy and appears more slender and less chunky by the end of babyhood. See Figure 4-2.

Bones

The number of bones increases during babyhood. Ossification begins in the early part of the first year, but is not completed until puberty. The fontanel, or soft spot on the skull, has closed in approximately 50 percent of all babies by the age of eighteen months, and in almost all babies by the age of two years.

Muscles and Fat

Muscle fibers are present at birth but in very undeveloped forms. They grow slowly during babyhood and are weak. By contrast, fat tissue develops rapidly during babyhood, due partly to the high fat content of milk, the main ingredient in a baby's diet.

Body Builds

During the second year of life, as body proportions change, babies begin to show tendencies toward characteristic body builds. The three most common forms of body build are *ectomorphic*, which tends to be long and slender, *endomorphic*, which tends to be round and fat, and *mesomorphic* which tends to be heavy, hard, and rectangular.

Teeth

The average baby has four to six of the twenty temporary teeth by the age of one and sixteen by the age of two. The first teeth to cut through are those in the front, the last to appear are the molars. The last four of the temporary teeth usually erupt during the first year of early childhood.

Nervous System

At birth, brain weight is one-eighth of the baby's total weight. Gain in brain weight is greatest during the first two years of life, thus accounting for the baby's top-heavy appearance. The cerebellum, which plays an important role in body balance and postural control, triples in weight during the first year of postnatal life. This is true also for the cerebrum. Immature cells, present at birth, continue to develop after birth but relatively few new cells are formed.

Sense Organ Development

By the age of three months, the eye muscles are well-enough coordinated to enable babies to see things clearly and distinctly and the cones are well-enough developed to enable them to see colors. Hearing develops rapidly during this time. Smell and taste, which are well developed at birth, continue to improve during babyhood. Babies are highly responsive to all skin stimuli because of the thin texture of their skin and because all sense organs relating to touch, pressure, pain, and temperature are present in well-developed forms.

Food dislikes, which begin to develop during the second year, are frequently the result of the prolongation of infantile eating patterns. After being accustomed to food in liquid form, it is difficult for babies to adjust to a semisolid form. This adds to their revolt against the food, even though they may like its taste.

Patterns of Elimination Bowel control begins, on the average, at six months, and bladder control begins

BOX 4-3

SOME COMMON SKILLS OF BABYHOOD

Hand Skills

Self-feeding

At eight months, most babies can hold their bottles after the nipples have been placed in their mouths; at nine months, they can put the bottle nipples in their mouths and take them out without help. At twelve months, they can drink from a cup when they hold it with both hands, and several months later they can drink from the cup using one hand. At thirteen months, babies begin to feed themselves with a spoon, and a month or two later they can spear food with a fork and carry it to their mouths with much spilling. By their second birthday, most babies can use spoons and forks without too much spilling.

Self-dressing

At the end of the first year most babies can pull off their socks, shoes, caps, and mittens. By the middle of the second year they will attempt to put on caps and mittens, and by the end of babyhood they can pull off all clothes and put on a shirt or dress.

Self-grooming

Self-bathing is limited mainly to running a cloth or sponge over the face and body. Before they are two, most babies try to brush their hair and teeth.

Play Skills

At twelve months, most babies can scribble with a pencil or crayon, and several months later they can throw or roll a ball, open a box, unscrew a lid from a bottle, turn the leaves of a book, build with a few blocks, insert pegs in a pegboard, string large beads, and cut a gash in paper with scissors.

Leg Skills

Babies learn to jump from an elevated position usually by movements resembling walking. They learn to climb stairs first by crawling and creeping. After they can walk alone, they go up and down steps in an upright position, placing one foot on a step and then drawing the other foot up after it. Very few babies are able to ride tricycles at this age and then only when they are held on the seat. They can swim by splashing with their arms and kicking their legs.

the early months of life, a baby is *ambidextrous*, with no preference for either hand. By the time they are eight months old, babies who are above average in mental and motor development show a greater degree of hand preference than those who are less well advanced, and this preference is usually for the right hand. However, most babies shift from the use of one hand to the other, depending largely on the position of the person or object they want to reach. If the object is closer to the right hand, that is the hand the baby will use.

Shifting likewise occurs during the second year but not as frequently as during the first. Thus, during babyhood, babies are neither dominantly left- nor dominantly right-handed, though they show, especially in the second year, a tendency to use one hand more than the other (4,73,94).

SPEECH DEVELOPMENT

Speech is a tool for communication. To be able to communicate with others, all individuals must be capable of two separate and distinct functions; the ability to comprehend the meaning of what others are trying to communicate to them and the ability to communicate to others in terms they can comprehend. Communication can be in any form of language—written, spoken, gesticulative, musical and artistic expressions, etc. But for the most part, spoken language is the most efficient because it is least likely to be misunderstood (22,77).

Both aspects of communication—comprehension of what others are trying to communicate and the ability to communicate one's thoughts and feelings to others in terms they can understand—are difficult and not mastered quickly. However, the foundations for both are laid during the babyhood years, though the ability to comprehend is generally greater when babyhood comes to a close than is the ability to speak (11,12,18).

Comprehension

The first task in learning to communicate with others is learning to comprehend what they say. At

BOX 4-5

COMMON EMOTIONAL PATTERNS IN BABYHOOD

Anger

Common stimuli that gives rise to anger in babies are interference with attempted movements, thwarting of some wish, not letting them do what they want to do, and not letting them make themselves understood. Typically, the angry response takes the form of screaming, kicking the legs, waving the arms, and hitting or kicking anything within reach. During the second year, babies may also jump up and down, throw themselves on the floor, and hold their breath.

Fear

The stimuli most likely to arouse fear in babies are loud noises; strange persons, objects, and situations; dark rooms; high places; and animals. Any stimulus which occurs suddenly or unexpectedly or which is different from what the baby is accustomed to gives rise to fear. The typical fear response in babyhood consists of an attempt to withdraw from the frightening stimulus, accompanied by whimpering, crying, temporary holding of the breath, and checking the activity engaged in when the baby became frightened.

Curiosity

Anything new or unusual acts as a stimulus to curiosity, unless the newness is so pronounced that it gives rise to fear. As fear wanes, it is replaced by curiosity. Young babies express curiosity mainly through their facial expressions—tensing the facial muscles, opening the mouth, and protruding the tongue. Later, babies grasp the objects that aroused their curiosity and handle, shake, bang, or suck them.

Joy

Joy is stimulated by physical well-being. By the second or third month of life, babies react to being played with, being tickled, and watching or listening to others. They express their pleasure or joy by smiling, laughing, and moving their arms and legs. When joy is intense, babies coo, gurgle, or even shout with glee, and all bodily movements are intensified.

Affection

Anyone who plays with babies, takes care of their bodily needs, or shows them affection will be a stimulus for their affection. Later, toys and the family pet may also become love objects for them. Typically, babies express their affection by hugging, patting, and kissing the loved object or person.

they may live in an environment that stimulates pleasant emotions and in which they are protected from stimuli that would normally give rise to such unpleasant emotions as fear and anger.

At all ages a dominance of the pleasant emotions is a guarantee of better adjustments than a dominance of the unpleasant emotions. At no age is this more true than during babyhood. Babies who experience a dominance of the pleasant emotions are laying the foundations for good personal and social adjustments and for patterns of behavior that will lead to happiness.

DEVELOPMENTS IN SOCIALIZATION

Early social experiences play a dominant role in determining the baby's future social relationships and patterns of behavior toward others. And because the baby's life is centered around the home, it is here that the foundations for later social behavior and attitudes are laid. There is little evidence that people are inherently social or antisocial. Instead, whether they become outer- or inner-bound—extroverted or introverted—depends mainly on their early social experiences.

Studies of the social adjustments of older children and even adolescents show the importance of the social foundations laid in babyhood. There are two reasons for the importance of these early foundations. First, the type of behavior babies show in social situations affects their personal and social adjustments. As Tautermannová has pointed out, "A smiling child is much more likely to provoke intensive maternal feelings and to become a good partner in the relation between him and his mother or other care-

sufficient, learned in connection with play, carries over into other areas of life as children grow older. The self-confidence that comes with self-sufficiency helps children to cope with the various problems that face them as they grow older.

Then, too, play encourages creativity. While creativity is only in its most rudimentary forms during babyhood, the satisfaction the individual derives from opportunities and encouragement to do things in a creative way provides an incentive to further creativity as the child emerges from the restricted environment of babyhood and has more opportunities to do things in an original way.

While much play in babyhood is solitary, as shown in Box 4-7, some of it is carried out with others, mainly members of the family—siblings, parents, or grandparents. Learning to play with others encourages babies to be cooperative instead of self-bound, an essential to good social relationships when babyhood comes to a close. Like other foundations, if foundations in cooperation are properly laid in babyhood, adjustment to the demands of childhood will be easier to meet successfully.

DEVELOPMENT OF UNDERSTANDING

Because all babies begin life with no comprehension of the meaning of the things they come in contact with in their environment, they must acquire, through maturation and learning, an understanding of what they observe. What meanings babies acquire depends partly on the level of their intelligence and partly on their previous experiences. As new meanings are acquired, babies interpret new experiences in terms of their memories of previous ones. The association of meanings with objects, people, and situations results in the development of *concepts*.

The behavior of normal babies shows that concepts develop rapidly. Babies show recognition of familiar people and objects in their environment through pleasurable responses, just as they regard strange people and objects with fear. At first, they respond to the total situation rather than to any one part of it. As a result, they respond to people, objects, and situations that have elements in common as if they were all one and the same thing.

That is why, as was pointed out earlier, conditioning of the emotions is so easy and so common during babyhood. In his classic experiment, Watson conditioned a baby to fear a rabbit by associating a loud, harsh noise with the rabbit. Later, Watson reported that the baby showed fear of white stuffed animals, a white muff, and even a person in a Santa Claus costume with a flowing white beard (113).

How Understanding Develops

The earliest perceptions of babies come through sensory exploration. They look at, listen to, touch, smell, and taste anything they can. Later, as their muscle coordinations develop, they are able to acquire more meanings through handling whatever is within their reach. Handling causes the attention to be fixed and this gives an opportunity to discover meanings. While babies of about six months of age may be held back in their exploratory behavior by fear of new and strange stimuli, by the end of the first year of life manipulation begins and they try to discover meanings in new and strange objects and situations. Piaget has labeled this the *sensorimotor* stage in conceptual development, lasting from birth to two or three years (84).

Toward the end of babyhood, babies begin to put words together into sentences generally beginning with "who," "what," and "why." While they cannot understand all that is said in explanation, they derive enough meaning from the words they hear and the accompanying demonstration to build on the meanings they already have discovered from sensory exploration and motor manipulation. At no time, however, do babies abandon the simpler forms of discovering meanings, even when they are capable of using more advanced forms.

By the time they are two years old, babies are capable of making simple generalizations based on similar experiences in which they have observed relationships. Their limited knowledge and experience, however, make it difficult for them to distinguish between living and inanimate objects. As a result, they believe that all objects are animate and have the same attributes as living things.

Many of the important concepts needed for adjustment to life are learned in rudimentary form in the babyhood years. As the baby's social horizons broaden during childhood and adolescence, new meanings will be added to the foundations laid at this time. Emotional weighting, characteristic of all concepts, begins to become an important element of the developing concepts during the babyhood years. The

You have either reached a page that is unavailable for viewing or reached your viewing limit for this book.

the personality structure tentatively formed in the early years of life.

Changes in Family Relationships

At no time in life do family relationships remain static. Sometimes these relationships change slowly and sometimes rapidly, sometimes for the better and sometimes for the worse. In babyhood, changes are rapid and they tend to be for the worse.

Many conditions are responsible for changes in family relationships but one of the most important is that all members involved in the relationship undergo changes of their own. Davids and Holden (29) have discussed the changes that take place in the mother-child relationship during the early months of the baby's life:

> *Such changes in maternal characteristics might well be a function of the infant's physical and/or temperamental attributes. That is, whether the infant is healthy or sickly, unusually attractive or obviously handicapped, usually calm and contented or generally fussy and irritable, especially responsive to maternal contacts or somewhat rejecting of her—these are the kinds of infant variables that could well play a prominent role in modifying the mother's attitudes and personality during the first few months after childbirth. Then again, it might be that the infant's physical or emotional makeup has little to do with the mother's changed outlook or behavior. Rather, in certain cases, it might be that changes in the mother's physical condition, or changes in the husband-wife relationship (in either a positive or a negative direction), or changes in the family's socioeconomic situation (for better or worse) are responsible for differences in maternal characteristics found during pregnancy and several months after childbirth.*

Normally, family relationships during most of the baby's first year are favorable. It has been said that "everyone loves a baby," and this holds true not only for parents but also for siblings, grandparents, and other relatives. However, before the baby's first birthday, some of this love has been tempered with annoyance, anger, frustration, and other unpleasant emotions, and the baby may have become negativistic in some respects, exhibiting behavior that is in sharp contrast to the docile compliance of early babyhood. With these changes comes a deterioration in the baby's relationships with different family members. Some of the most common causes of such deterioration are given in Box 4-9.

PERSONALITY DEVELOPMENT IN BABYHOOD

The potentials for personality development are present at birth. As Thomas et al. have emphasized, "Personality is shaped by the constant interplay of temperament and environment" (106). And, because no two individuals have the same physical or mental endowments or the same environmental experiences, no two persons will ever develop identical personality patterns.

Babyhood—The Critical Period in Personality Development

Babyhood is often referred to as a "critical period" in the development of personality because at this time the foundations are laid upon which the adult personality structure will be built.

A number of lines of evidence show how critical a time babyhood is in the development of personality. First, studies of emotional deprivation due either to neglect in the home or to institutionalization have revealed that personality changes are an almost inevitable accompaniment (23,90).

Second, because the baby's environment is limited almost exclusively to the home and because the mother is the most constant companion, the kind of person she is and the kind of relationship they share will have a profound influence on the baby's personality.

Third, there is evidence that functions which are in an active stage of development when something unfavorable occurs in the environment are most subject to damage. For example, when the baby is developing independence, overprotectiveness on the part of the parents is especially harmful (100).

Fourth, sex differences in personality begin to appear as early as the first year of life. There is little evidence that these differences are due to heredity and much evidence that they are the result of environmental pressures, which are different for boys and for girls. These environmental pressures are likely to increase with time, and thus the foundations laid in babyhood will persist (45).

Physiological Habits The foundations of the important physiological habits—eating, sleeping, and eliminating—are established during babyhood, and thus a common physical hazard of this period is the establishment of unfavorable attitudes on the baby's part toward these habits. Box 4-10 gives some of the common hazards that arise in relation to the establishment of physiological habits.

Psychological Hazards

The most serious psychological hazards of babyhood involve the baby's failure to master the developmental task for that age. Mastery of these tasks is important for two reasons. First, the sooner babies gain control over their bodies, the sooner they can become independent of help from others. Second, mastery of these tasks provides the foundations on which mastery of later developmental tasks will be built. The better the mastery of babyhood tasks, the more easily and quickly will the child be able to master the tasks of early childhood.

Most of the serious psychological hazards of babyhood are related, either directly or indirectly, to the failure to master the developmental tasks of babyhood.

Hazards in Motor Development When motor development is delayed, babies will be at a great disadvantage when they begin to play with age-mates. The more they lag behind the group in motor control, the slower they are likely to be in acquiring the skills other children possess. Furthermore, because the desire to be independent makes its appearance early in the second year, babies whose motor development lags behind that of their peers become frustrated when they try to do things for themselves and fail.

Almost as handicapping to good adjustment is parental pressure to achieve motor control and to learn motor skills before maturationally ready to do so. Under such conditions, babies often develop resistant, negativistic attitudes that will stifle their motivation and cause a delay in learning tasks that they otherwise are ready to master.

Speech Hazards Delayed speech, like delayed motor control, is serious in babyhood because, at this age, the foundations are being laid for the development of the tools of communication that will be needed later as social horizons broaden. In early childhood, when interest in people outside the home begins to awaken, children whose speech lags markedly behind that of other children find themselves in the role of outsiders.

There are a number of reasons for delayed speech, the most common of which are low level of intelligence, lack of stimulation (especially during the first year of life), and multiple births. When parents and other caretakers fail to stimulate babbling and early attempts to speak, most babies lose interest in trying to speak. The result is that their speech is

BOX 4-10

COMMON HAZARDS IN ESTABLISHING PHYSIOLOGICAL HABITS

Eating Habits

Babies who suck for long periods show signs of tenseness. They engage in more nonnutritive sucking (such as thumb-sucking), have more sleep difficulties, and are more restless than those whose sucking periods are shorter. If weaning is delayed, babies are likely to resist new kinds of food and substitute thumb-sucking for the nipple. They will also resist semisolid foods if such foods are introduced too early—not because of their taste but because of their texture.

Sleep Habits

Crying, strenuous play with an adult, or noise can make babies tense and keep them from falling asleep. Sleep schedules that do not meet the requirements of individual babies make them tense and resistant to sleep.

Habits of Elimination

These habits cannot be established until the nerves and muscles have developed adequately. Trying to toilet train babies too early will make them uncooperative about establishing these habits when they are maturationally ready. Delay in toilet training, on the other hand, results in habits of irregularity and lack of motivation on the baby's part. Enuresis—bed-wetting—is common when training is not timed according to the baby's developmental readiness.

BOX 4-12

FAMILY-RELATIONSHIP HAZARDS IN BABYHOOD

Separation from Mother

Unless a stable and satisfactory substitute is provided, babies who are separated from their mothers develop feelings of insecurity which are expressed in personality disturbances that may lay the foundation for later maladjustments.

Failure to Develop Attachment Behavior

Babies who fail to establish attachment behavior with their mothers, or some stable mother-substitute, suffer from feelings of insecurity similar to those associated with separation from their mothers. In addition, they do not experience the pleasures that come from close, personal relationships. This handicaps them in establishing friendships as they grow older.

Deterioration in Family Relationships

The deterioration in family relationships that almost always occurs during the second year of life is psychologically hazardous because babies notice that family members have changed attitudes toward them and treat them differently. As a result, they usually feel unloved and rejected—feelings which lead to resentment and insecurity.

Overprotectiveness

Babies who are overprotected and prevented from doing what they are capable of doing become overdependent and afraid to do what other babies of their ages do. This, in time, is likely to lead to abnormal fear of school—*school phobia*—and excessive shyness in the presence of strangers.

Inconsistent Training

Inconsistent child-training methods—which can be the result of permissiveness or of parents' feelings of inadequacy in the parental role—provide poor guidelines for babies. This slows down their learning to behave in approved ways.

Child Abuse

When parents are unhappy in their parental roles or when a frictional relationship exists between them, some babies become the targets of anger and resentment. The babies are either neglected or abused. The second year of life is a more common time for child abuse than the first because babies are more troublesome to their parents and this triggers the outlet of anger, resentment, and other unpleasant emotions engendered in the relationship of the parents.

bers have toward them. They then express these unfavorable self-concepts in aggressive, resentful, negativistic, or withdrawn behavior, all of which make them seem less endearing to family members than they were earlier. The changed attitudes of family members are then reflected in their treatment of the babies. This reinforces the unfavorable self-concepts that the baby is in the process of developing.

HAPPINESS IN BABYHOOD

Normally, the first year of life can be and is one of the happiest of the life span. The dependency of young babies makes them appealing to children as well as to adults. Most children like to play with them, while adults not only want to cuddle and love them but are happy to tolerate their crying and the other disruptions their care brings into their lives.

By contrast, for almost all babies the second year of life is far less happy than the first. There are many reasons for this, the most important of which are given in Box 4-13.

Not all babies, it is important to recognize, have reason to be unhappy as babyhood draws to a close, nor are babies who have one or more reasons for unhappiness *always* unhappy. There are times when they are happy, just as there are times when they are not. Which condition will dominate depends on how many reasons the baby has for being unhappy and how frequently the causes for unhappiness occur. Babies who are neglected or abused by their parents or other caretakers have more reason to be unhappy than those whose parents and caretakers are only occasionally so annoyed by their behavior that they treat them in a punitive way. Generally, most babies have more reason to be unhappy during the second year of life than during the first.

old infants studied in different parts of the world. *Child Development*, 1970, **41**, 555–600.

70. Meredith, H. V. Relation between tobacco-smoking of pregnant women and body size of their progeny: A compilation and synthesis of published studies. *Human Biology*, 1975, **47**, 451–472.

71. Meredith, H. V. Somatic changes during human postnatal life. *Child Development*, 1975, **46**, 603–610.

72. Messer, S. B., and M. Lewis. Social class and sex differences in the attachment and play behavior of the year-old infant. *Merrill-Palmer Quarterly*, 1972, **18**, 295–306.

73. Miller, E. Handedness and the pattern of human ability. *British Journal of Psychology*, 1971, **62**, 111–112.

74. Moerk, E. L. Piaget's research as applied to the explanation of language development. *Merrill-Palmer Quarterly*, 1975, **21**, 151–169.

75. Mueller, E., and J. Brenner. The origins of social skills and interaction among play-group toddlers. *Child Development*, 1977, **48**, 854–861.

76. Naeye, R. L., R. Fisher, M. Ryser, and P. Whalen. Carotoid body in the sudden infant death syndrome. *Science*, 1976, **191**, 567–569.

77. Ostwald, P. F., and P. Peltzman. The cry of the human infant. *Scientific American*, 1974, **230**(3), 84–90.

78. Papoušek, H., and M. Papoušek. Mirror image and self-recognition in young human infants: A new method of experimental analysis. *Developmental Psychobiology*, 1974, **7**, 149–157.

79. Paradise, E., and F. Curcio. Relationship of cognitive and affective behaviors to fear of strangers in male infants. *Developmental Psychology*, 1974, **10**, 476–483.

80. Parke, R. D., and D. B. Sawin. Fathering: Its major role. *Psychology Today*, 1977, **11**(6), 108–112.

81. Parton, D. A. Learning to imitate in infancy. *Child Development*, 1976, **47**, 14–31.

82. Passman, R. H. Providing attachment objects to facilitate learning and to reduce anxiety: Effects of mothers and security blankets. *Developmental Psychology*, 1977, **13**, 25–28.

83. Peterson, R. A. The natural development of nocturnal bladder control. *Developmental Medicine & Child Neurology*, 1971, **13**, 730–734.

84. Piaget, J. *Psychology and epistemology*. New York: Grossman, 1971.

85. Ramey, C. T., N. W. Finkelstein, and C. O'Brien. Toys and infant behavior in the first year of life. *Journal of Genetic Psychology*, 1976, **129**, 341–342.

86. Roe, K. V. Amount of infant vocalization as a function of age: Some cognitive implications. *Child Development*, 1976, **47**, 936–941.

87. Rosenblith, J. F., and R. Anderson-Huntington. Unexpected deaths in infancy. *Developmental Medicine & Child Neurology*, 1977, **19**, 271.

88. Ross, H. S. The influence of novelty and complexity on exploratory behavior in 12-month-old infants. *Journal of Experimental Child Psychology*, 1974, **17**, 436–451.

89. Ross, H. S. The effects of increasing familiarity on infant's reactions to adult strangers. *Journal of Experimental Child Psychology*, 1975, **20**, 226–239.

90. Rutter, M. Maternal deprivation reconsidered. *Journal of Psychosomatic Research*, 1972, **16**, 241–250.

91. Scarr, S., and P. Salapatek. Patterns of fear development during infancy. *Merrill-Palmer Quarterly*, 1970, **16**, 53–90.

92. Seitz, S., and S. Marcus. Mother-child interactions: A foundation for language development. *Exceptional Children*, 1976, **42**, 445–449.

93. Serafica, F. C. The development of attachment behaviors: An organismic-developmental perspective. *Human Development*, 1978, **21**, 119–140.

94. Seth, G. Eye-hand coordination and "handedness": A developmental study of visuo-motor behavior in infancy. *British Journal of Educational Psychology*, 1973, **43**, 35–49.

95. Spelke, E., P. Zelazo, J. Kagan, and M. Kotelchuck. Father interaction and separation protest. *Developmental Psychology*, 1973, **9**, 83–90.

96. Sostek, A. M., T. F. Anders, and A. J. Sostek. Diurnal rhythms in 2–8-week-old infants: Sleep-waking state organization as a function of age and stress. *Psychosomatic Medicine*, 1976, **38**, 250–256.

97. Spock, B. *Raising children in a difficult time*. New York: Norton, 1974.

98. Stern, E., A. H. Parmelee, Y. Akiyama, M. A. Schultz, and W. H. Werner. Sleep cycle characteristics of infants. *Pediatrics*, 1969, **43**, 65–70.

99. Stone, G. P. The play of little children. In R. E. Herron and B. Sutton-Smith (Eds.). *Child's play*. New York: Wiley, 1971, Pp. 4–14.

100. Stone, L. J., and J. Church. *Childhood and adolescence: A psychology of the growing person*. (3rd ed.) New York: Random House, 1973.

101. Stone, L. J., H. F. Smith, and L. B. Murphy (Eds.). *The competent infant: Research and commentary*. New York: Basic Books, 1973.

102. Tanner, J. M. Physical growth. In P. H. Mussen (Ed.). *Carmichael's manual of child psychology*. (3rd ed.) Vol. 1. New York: Wiley, 1970, Pp. 77–165.

103. Tanner, J. M. *Fetus into man: Physical growth from conception to maturity*. Cambridge, Mass.: Harvard University Press, 1978.

104. Tautermannová, M. Smiling in infants. *Child Development*, 1973, **44**, 701–704.

105. Terman, L. M., and M. A. Merrill. *Stanford-Binet Intelligence Scale*. Boston: Houghton Mifflin, 1960.

106. Thomas, A., S. Chess, and H. G. Birch. The origin of personality. *Scientific American*, 1970, **223**(2), 102–109.

107. Tizard, J. Early malnutrition, growth and mental development in man. *British Medical Bulletin*, 1974, **30**, 169–174.

108. Todor, J. I. Age differences in integration of components of a motor task. *Perceptual & Motor Skills*, 1975, **41**, 211–215.

109. Tulkin, S. R. Social class differences in attachment behaviors of ten-month-old infants. *Child Development*, 1973, **44**, 171–174.

110. Ubell, E. Crib Death: 10,000 victims in year, cause unknown. *The New York Times*, Jan. 30, 1972.

111. Van Lieshout, C. F. M. Young children's reactions to barriers placed by their mothers. *Child Development*, 1975, **46**, 879–886.

112. Walanski, N. The stature of offspring and the assortive mating of parents. *Human Biology*, 1974, **46**, 613–619.

113. Watson, J. B. *Behaviorism*. New York: People's Institute Publishing Company, 1925.

114. Weisler, A., and R. B. McCall. Exploration and play: Résumé and redirection. *American Psychologist*, 1976, **31**, 492–508.

115. Wenar, C. Executive competence in toddlers: A perspective,

young children are often obstinate, stubborn, disobedient, negativistic, and antagonistic. They have frequent temper tantrums, they are often bothered by bad dreams at night and irrational fears during the day, and they suffer from jealousies.

Because of these problems, early childhood seems a less appealing age than babyhood to many parents. The dependency of the baby, so endearing to parents as well as to older siblings, is now replaced by a resistance on the child's part to their help and a tendency to reject demonstrations of their affection. Furthermore, few young children are as cute as babies, which also makes them less appealing.

Parents often refer to early childhood as the *toy age* because young children spend much of their waking time playing with toys. Studies of children's play have revealed that toy play reaches its peak during the early childhood years and then begins to decrease when children reach the school age (11,61).

This, of course, does not mean that interest in playing with toys ends abruptly when the child enters school. Instead, with entrance into first grade, children are encouraged to engage in games and modified forms of sports, none of which require the use of toys. When alone, however, children continue to play with their toys well into the third or even fourth grade.

During the preschool years, nursery schools, kindergartens, day-care centers, and organized play groups all emphasize play which makes use of toys. As a result, whether young children are playing alone or with peers, toys are an important element of their play activities.

Names Used by Educators

Educators refer to the early childhood years as the *preschool* age to distinguish it from the time when children are considered old enough, both physically and mentally, to cope with the work they will be expected to do when they begin their formal schooling. Even when children go to nursery school or kindergarten, they are labeled *preschoolers* rather than *schoolchildren*. In the home, day-care center, nursery school, or kindergarten, the pressures and expectations young children are subjected to are very different from those they will experience when they begin their formal education in the first grade. The early childhood years, either in the home or in a preschool, are a time of preparation.

Names Used by Psychologists

Psychologists use a number of different names to describe the outstanding characteristics of the psychological development of children during the early years of childhood. One of the most commonly applied names is the *pregang age*, the time when children are learning the foundations of social behavior as a preparation for the more highly organized social life they will be required to adjust to when they enter first grade.

Because the major development that occurs during early childhood centers around gaining control over the environment, many psychologists refer to early childhood as the *exploratory age*, a label which implies that children want to know what their environment is, how it works, how it feels, and how they can be a part of it. This includes people as well as inanimate objects. One common way of exploring in early childhood is by asking questions: thus this period is often referred to as the *questioning age*.

At no other time in the life span is imitation of the speech and actions of others more pronounced than it is during early childhood. For this reason, it is also known as the *imitative age*. However, in spite of this tendency, most children show more creativity in their play during early childhood than at any other time in their lives. For that reason, psychologists also regard it as the *creative age*.

DEVELOPMENTAL TASKS OF EARLY CHILDHOOD

Although the foundations of some of the developmental tasks young children are expected to master before they enter school are laid in babyhood, much remains to be learned in the relatively short four-year span of early childhood. Refer to page 10 for a complete list of Havighurst's developmental tasks.

When babyhood ends, all normal babies have learned to walk, though with varying degrees of proficiency; have learned to take solid foods; and have achieved a reasonable degree of physiological stability. The major task of learning to control the elimination of body wastes has been almost completed and will be fully mastered within another year or two.

While most babies have built up a useful vocabulary, have reasonably correct pronunciation of the words they use, can comprehend the meaning of

cared for in day-care centers or day camps during the summer months, are less likely to develop left-handed tendencies than children whose early childhood years are spent mainly in the home and with neighborhood play groups.

The reason for this is that, in preschools and child-care centers, teachers and other caretakers are advised to encourage children to use their right hands and are expected to teach new hand skills in such a way that children who are still somewhat ambidextrous will find the use of their right hands relatively easy and far less confusing than they will by the time they reach first grade. Not all preschools or child-care centers emphasize the encouragement of right-handedness but many more do than those which ignore this aspect of guidance. By contrast, many parents believe that handedness is a hereditary trait and, as a result, when they see their children using their left hands, they assume that they are *naturally* left-handed and do nothing to encourage them to learn new skills with their right hands as the dominant ones.

Because many of the hand skills young children learn cannot be carried out with one hand but require the use of both hands, both hands must be trained to carry out the skill. However, few skills require that both hands play equally important roles in carrying out the skills. Consequently, in teaching young children new hand skills emphasis should be placed on the movements made by the dominant hand and those by the auxiliary hand. These movements are often quite different. In the case of crayoning, for example, the dominant hand uses the crayon and the auxiliary hand holds the paper in place so the child can crayon a figure on it. In buttoning a garment, most of the movements of pushing the button through the hole are done by the dominant hand while the movements made by the auxiliary hand consist mainly of holding the garment in such a way that the button will be close enough to the buttonhole to be inserted into it.

IMPROVEMENTS IN SPEECH DURING EARLY CHILDHOOD

By the time children are two years old, most of the prespeech forms of communication they found so useful during babyhood have been abandoned. Young children no longer babble, and their crying is greatly curtailed. They may use gestures, but mainly as supplements to speech—to emphasize the meaning of the words they use—rather than as substitutes for speech. However, they continue to communicate with others by emotional expressions which, on the whole, are less subject to social disapproval and less likely to be judged as "babyish" than other prespeech forms (13). (Refer to pages 88–89 for a more complete discussion of prespeech forms of communication.)

During early childhood, there is a strong motivation on the part of most children to learn to speak. There are two reasons for this. First, learning to speak is an essential tool in socialization. Children who can communicate easily with their peers make better social contacts and are more readily accepted as members of the peer group than children whose ability to communicate is limited. Young children attending preschools will be handicapped both socially and educationally unless they speak as well as their classmates.

Second, learning to speak is a tool in achieving independence. Children who cannot make known their wants and needs, or who cannot make themselves understood, are likely to be treated as babies and fail to achieve the independence they want and feel capable of handling successfully. If children cannot tell their parents or other caretakers that they want to try to cut their own meat or brush their own hair, the adults are likely to continue these tasks on the assumption that the children are too young to be interested in mastering them. This keeps the child from becoming self-reliant and independent.

To improve communication, children must master two major tasks, both of which, as was pointed out in the preceding chapter, are essential elements of learning to speak. They must, first, improve their ability to comprehend what others are saying to them and, second, they must improve their own speech so that others can comprehend what they are trying to communicate to them. While parents and other caretakers usually put more emphasis on learning to speak, the task of improving comprehension is, indirectly, taken care of by children themselves because of their strong motivation to communicate as a tool for social belonging.

Improvement in Comprehension

To be able to communicate with others, children must understand what others say to them. Otherwise their speech will be unrelated to what others

BOX 5-4

COMMON EMOTIONS OF EARLY CHILDHOOD

Anger

The most common causes of anger in young children are conflicts over playthings, the thwarting of wishes, and vigorous attacks from another child. Children express anger through temper tantrums, characterized by crying, screaming, stamping, kicking, jumping up and down, or striking.

Fear

Conditioning, imitation, and memories of unpleasant experiences play important roles in arousing fears, as do stories, pictures, radio and television programs, and movies with frightening elements. At first, a child's response to fear is panic; later, responses become more specific and include running away and hiding, crying, and avoiding frightening situations.

Jealousy

Young children become jealous when they think parental interest and attention are shifting toward someone else in the family, usually a new sibling. Young children may openly express their jealousy or they may show it by reverting to infantile behavior, such as bed-wetting, pretending to be ill, or being generally naughty. All such behavior is a bid for attention.

Curiosity

Children are curious about anything new that they see and also about their own bodies and the bodies of others. Their first responses to curiosity take the form of sensorimotor exploration; later, as a result of social pressures and punishment, they respond by asking questions.

Envy

Young children often become envious of the abilities or material possessions of another child. They express their envy in different ways, the most common of which is complaining about what they themselves have, by verbalizing wishes to have what the other has (see Figure 5-3), or by appropriating the objects they envy.

Joy

Young children derive joy from such things as a sense of physical well-being, incongruous situations, sudden or unexpected noises, slight calamities, playing pranks on others, and accomplishing what seem to them to be difficult tasks. They express their joy by smiling and laughing, clapping their hands, jumping up and down, or hugging the object or person that has made them happy.

Grief

Young children are saddened by the loss of anything they love or that is important to them, whether it be a person, a pet, or an inanimate object, such as a toy. Typically, they express their grief by crying and by losing interest in their normal activities, including eating.

Affection

Young children learn to love the things—people, pets, or objects—that give them pleasure. They express their affection verbally as they grow older but, while they are still young, they express it physically by hugging, patting, and kissing the object of their affection.

adults outside the home become more frequent and more pronounced than they were in early childhood.

Variations in Emotional Patterns

Many factors influence the intensity and frequency of emotions in early childhood. Emotions are intense at certain *ages* and less so at others. Temper tantrums, for example, reach their peak of severity between the ages of two and four, after which they become shorter in duration and give way to sulking, brooding, and whining. Fear follows much the same pattern, partly because young children realize that there is nothing frightening about situations they formerly feared and partly because of social pressures that make them feel that they must conceal their fears. By contrast, jealousy begins around the age of two and increases as the child grows older.

Young children vary greatly in amount of curiosity and in the way they express it. *Bright* children, it has been found, are more active in exploring their environment and ask more questions than those of lower intellectual levels (76).

BOX 5-6

CATEGORIES OF COMPANIONS

Associates

Associates are people who satisfy an individual's companionship needs by being in the same environment where they can be watched and listened to. There is no direct interaction between the individual and the associates. At any age, associates can be of either sex and of any age. Adults, for example, enjoy watching and listening to children just as children enjoy watching and listening to adults.

Playmates

Playmates are people with whom individuals engage in pleasurable activities. Their age and sex are, on the whole, less important than the interests and skills they have in common with the individual for whom they serve in this role. Children prefer playmates of their own sex.

Friends

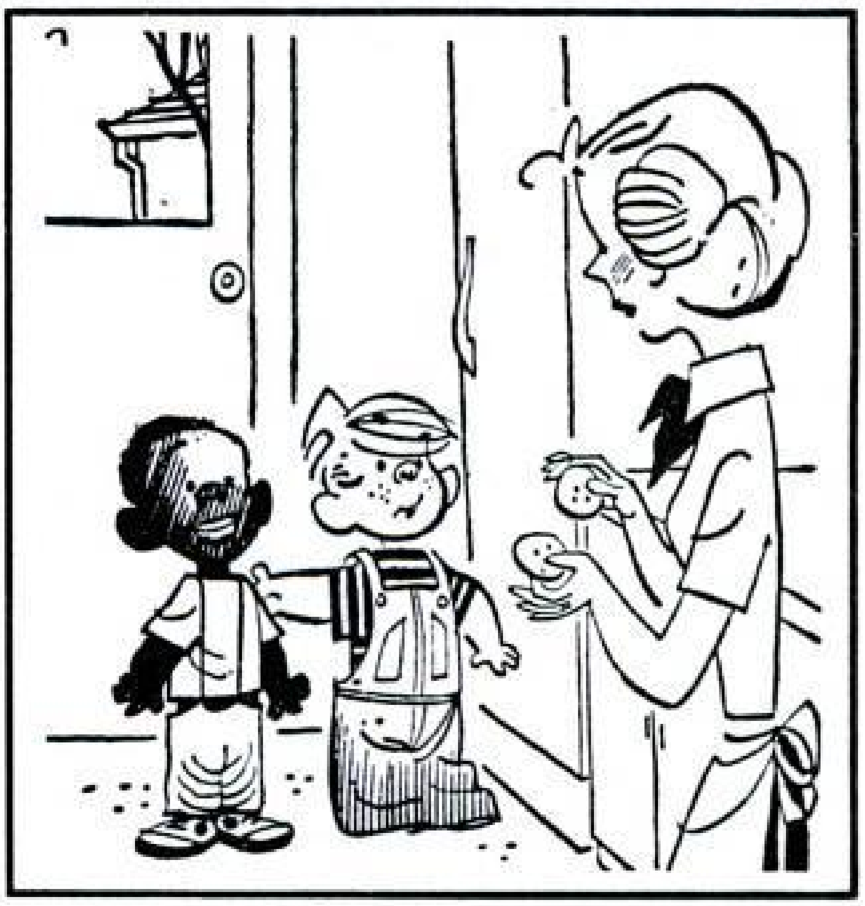
Friends are not only congenial playmates, but they are also people with whom the individual can communicate by exchanging ideas and confidences and by asking or giving advice. Throughout childhood and adolescence, the most congenial and most satisfactory friends are those of the individual's own sex and level of development, who have similar interests and values.

dren younger or older may serve as associates but they are not satisfactory playmates because their play is on a different level.

Young children give little consideration to the traits of those they associate with. In fact, some traits they find unacceptable in playmates, such as foolhardiness and cutting up, they find amusing in associates and may even envy them for their "nerve." However, when it comes to selecting playmates and, later, friends, the traits of these individuals become very important.

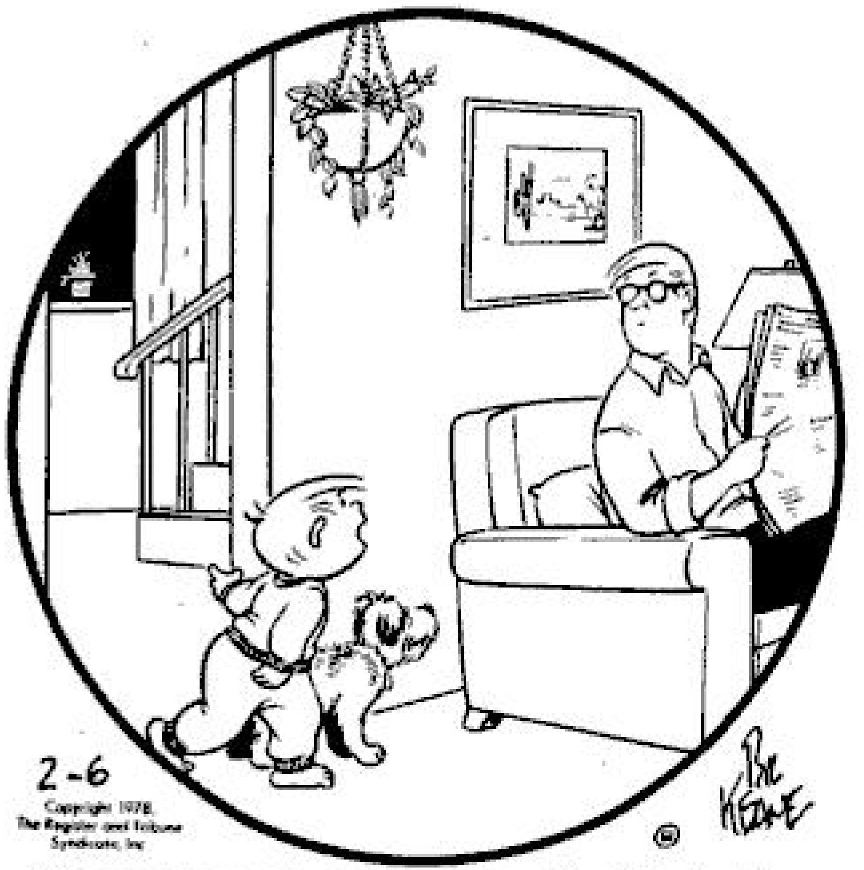
Not only do they want playmates who have the play skills they admire but they want their playmates to be good sports, cooperative, generous, unselfish, honest, and loyal. These qualities are even more

FIGURE 5-5 Among preschool children, there is little refusal to play with children of another race. (Hank Ketcham. "Dennis the Menace." *Publishers-Hall Syndicate*, Jan. 6, 1970. Used by permission.)



"Me 'n' Jackson are exactly the same age. Only he's different. He's LEFT-HANDED!"

Young children often find elderly people to be congenial playmates because they engage in pleasurable activities with them. (Raimondo Borea/Editorial Photocolor Archives.)


2-6
Copyright 1978, The Register and Tribune Syndicate, Inc
Bil Keane
®

"I'm gonna say my prayers, Daddy. Is there anything you want?"

FIGURE 5-8 For most young children, prayers are "begging rituals" in which they ask God to do something for them. (Adapted from Bil Keane. "The Family Circus." *Register and Tribune Syndicate*, Feb. 6, 1978. Used by permission.)

cause so many of the things that mystify children, such as birth, death, growth and the elements, are explained in religious terms, their curiosity about religious matters is great and they ask many questions relating to religion. Young children accept the answers to their questions without doubting as older children and adolescents often do.

The religious concepts of young children are realistic in the sense that they interpret what they hear and see in terms of what they already know. To them, for example, God is a man who wears clothes different from the clothes of the people they know and who has a flowing white beard and long white hair. They accept what they have been taught, namely, that God is all-knowing, all-powerful and a "watcher" who observes what people do and punishes them if they do bad things but is kind and merciful to those who try to be good. To young children, angels are men and women with white wings, and heaven is a place where every human wish is gratified.

Throughout early childhood, interest in religion is egocentric. Prayer, for example, is a way of gaining one's desires. To many young children, God is a person who can and will do things for others and who requires no more than good behavior as payment. See Figure 5-8. The egocentrism of religion in early childhood is best illustrated by young children's attitudes toward Christmas. This is a day they think of as when Santa Claus will bring them all the things they asked for rather than as a time to celebrate Christ's birth.

Early childhood has been called the *fairy-tale stage* of religious belief. This is because young children endow all their beliefs with an element of unreality. That is why religious stories and the pageantry of religious services has such a strong appeal for them. Even home religious observances inspire awe and reverence in young children and add to their desire to participate in these observances.

Interest in the Human Body

Young children become interested in the exterior of the body before the interior. However, before early childhood comes to an end, most young children have an absorbing interest in the interiors of their bodies and want to know not only where their hearts, lungs, brains, etc., are but also what they do. They are also curious about elimination and where the products coming from their bodies originated.

When young children recognize anatomical differences between boys and girls, men and women, they want to know what these differences mean and what causes them. They are curious about germs, how they cause the body to become sick, and how medicine can drive the germs out of the body and make the person well. When a person dies, young children are curious about the body and how it gets to heaven.

Young children express their interest in the body by commenting on the various parts and by asking questions about them. As this is usually not enough to satisfy their curiosity, they examine different parts of their bodies and the bodies of their playmates. Nothing fascinates them more than the processes of elimination, which they watch with curiosity whenever they go to the toilet.

Unlike adolescents and even some adults, interest in the human body among young children is largely objective. While it is true that they want to know about their bodies, their interest in them is impersonal in the sense that they do not think of their bodies as their bodies per se but rather as *things* that have strange and curiosity-provoking ways of func-

BOX 5-11

CONDITIONS CONTRIBUTING TO CHANGED PARENT-CHILD RELATIONSHIPS

Changes in the Child

When soft, cuddly babies become more independent and self-sufficient, they tend to be rebellious, mischievous, self-assertive, exploratory—constantly into everything—demanding of attention, and refusing to do what they are told to do. Even in looks they are less appealing then they were as babies.

Changes in Parental Attitudes

As young children become more independent, parents feel that they need less care and attention than they did when they were babies. But even though young children want to be independent, they often resent not having the attention they had become accustomed to during babyhood.

Parental Concept of a "Good" Child

When young children do not come up to parental expectations, parents often become critical and punitive. Children react to this treatment by being even more negativistic and troublesome.

Childish Concept of a "Good" Parent

To most young children, "good" parents are at their beck and call, willing to do what they want when they want it. When parents fail to conform to this concept, children resent it and this weakens the affection children have for their parents. See Figure 5-9.

Parental Preferences

Because mothers spend more time with young children than fathers, and because they better understand troublesome behavior, many young children prefer their mothers and show it plainly. If fathers resent this and show their resentment by being critical of young children and their behavior, it further widens the gap between them. Should little boys show a preference for their fathers, many mothers resent this, feeling that as they are the ones who have assumed greater responsibility for the care of the children, they should be the favorites.

Preference for Outsiders

When young children go to nursery school or kindergarten or when they are placed in a child-care center, they sometimes develop a preference for a teacher or caretaker. Many parents feel hurt and resentful, thus widening the gap between them and their children.

relationship there is during the early childhood years. Of less significance are sibling relationships and relationships with relatives, especially grandparents. The influence comes from the closeness of the relationship the child has with a specific family member. When, for example, young children feel closer to one parent than to the other, they imitate the attitudes, emotions, and behavior patterns of that parent.

Parent-Child Relationships

Changes in parent-child relationships, which began during the second year of babyhood, continue throughout early childhood, usually at a more rapid rate. Many conditions are responsible for these changes, the most common and most important of which are given in Box 5-11.

Because young children depend more on their parents for feelings of security and for happiness than on anyone else, poor relationships with their parents have a devastating effect. This is especially true when the poor relationship is with the mother, the parent on whom most young children are especially dependent.

Not only is a poor relationship with parents serious because it undermines feelings of security but it is especially serious if it is broken, due to death or divorce. Children who are deprived of the parent on whom they have depended for security since birth are likely to experience severe emotional trauma when this source of security is removed. Some of the emotional trauma can be eased if the missing parent is replaced by a stepparent, or if the child is adopted into a two-parent family where a satisfactory relationship can be established (71,139).

Sibling Relationships

The pleasant relationship between babies and their siblings starts to deteriorate during the second year of life and, by the time babies become young

Accidents Most young children experience cuts, bruises, infections, burns, broken bones, strained muscles, or similar minor disturbances resulting from accidents. Others have more serious accidents that disable them temporarily or permanently. As was pointed out above, boys have more accidents than girls, and the accidents tend to be more serious.

Although most accidents in early childhood are not fatal, many of them leave permanent physical or psychological scars. Many *disabilities* of childhood, for example, are the result of accidents. A disability can cause young children to develop feelings of inferiority and martyrdom that permanently distort their personality patterns. Even if an accident leaves no permanent physical scar, it can make young children fearful and timid to the point where these feelings will predominate in their adjustments to life.

Unattractiveness As early childhood progresses, children become increasingly unattractive, reaching a low point as they emerge into late childhood. There are a number of reasons for this. First, as the body changes shape, children begin to look skinny and gawky; second, their hair becomes coarser and less manageable, and this gives them an unkempt appearance; third, there are gaps in the mouth where baby teeth have fallen out and the permanent teeth which have erupted seem proportionally too large; and, fourth, young children care more about having a good time than about keeping neat and clean. The result is that they frequently look dirty and ill-groomed.

Regardless of the individual's age, people react positively to those who are attractive looking and negatively to those who are unattractive. As one preschooler explained, "People like you if you are pretty" while another said, "You're nice to pretty people" (22). The less attractive appearance of young children added to their changed behavior makes them less appealing to their parents and other adults than they were when they were babies. This many young children interpret as rejection and bitterly resent it. Even in the peer group, attractiveness is a social advantage, especially for girls. It may be a social disadvantage for boys, especially as they approach the gang age of late childhood (129).

Awkwardness As Dare and Gordon have explained, "Children are not by nature clumsy and, once the toddler stage has passed, the grace of movement of the average child is something to be admired. So the child whose movements are awkward and incoordinate presents an unhappy contrast" (18).

While awkwardness in early childhood may be due to brain damage at birth, to mental deficiency, or to some other physical cause, it is far more likely to be due to the fact that children are hampered by overprotective parents, by fears engendered by accidents or warnings to "be careful," by environmental obstacles, or by lack of opportunity to practice. As a result, motor development is delayed and children give the impression of being "awkward" as compared with their age-mates (27).

Children who are awkward due to delay in their motor development cannot keep up with their age-mates and, as a result, they are left out of their play. They soon come to think that their age-mates are better than they—a feeling which, in time, may become generalized and develop into an inferiority complex.

Obesity Young children who are 20 percent or more above the norm for their ages and body builds are regarded, medically, as "obese." Children with endomorphic body builds tend, as a group, to have more problems with obesity than do those with mesomorphic or ectomorphic builds.

Obesity is always a hazard and this is just as true of early childhood as of any other age. First, it is a health hazard. Like people of any age, obese children are far more likely to develop diabetes and to experience heart and blood-pressure problems than are those whose weight is more nearly normal. Second, obesity is a hazard to attractiveness. While chubby babies may be regarded as "cute," plump, overstuffed young children are not only not regarded as "cute" but, more seriously, they are likely to be scorned by their peers and labeled "Fatty." In addition, obesity is a hazard in early childhood because it is the time when eating habits are being established. If young children are encouraged to overeat, if they are praised and rewarded for their "clean plates," and if they are permitted to overindulge in carbohydrates and what is commonly known as "junk food"—food that fills one up but has little nutrient value—the chances are that the habit will become a life-long one that will lead to an obesity problem that will plague them throughout life (86).

Left-Handedness As Herron has pointed out, "Throughout history, the left hand has had a bad

nightmares, increased aggressiveness in play with other children, and acceptance of patterns of unsocial behavior as the norm. This is especially true when parents exercise little or no control over the programs their children watch (104,140). Furthermore, while many parents claim that television watching is not harmful to young children because they do not "understand what they see," they fail to realize that children are less critical than adults and therefore are more influenced by what they see on the screen than adults are. They may not understand what a particular program is about, but they often have a distorted impression or misconception of what they have seen. Thus even a harmless program can be harmful to the young child. Even more important, young children remember details of frightening programs better than those of programs that arouse less fear, which reinforces their harmful effects.

Toys can present another play hazard in early childhood. Toys that offer little opportunity for creativity, such as fully equipped doll houses or sets of soldiers, will stifle the child's creative urge. The child's creativity can also be stifled if parents or nursery school teachers provide too much supervision and direction concerning the use of toys. Children who are given too many toys that encourage aggressive play, such as toy guns or soldiers, are likely to develop aggressive patterns of behavior which they carry over into real-life situations (135).

Hazards in Concept Development There are three common hazards in concept development during the early childhood years. The first is *inaccuracy in understanding*. Because of their limited experience with people and things, because of their limited vocabularies which make it difficult for them to comprehend accurately the meaning of what is said to them, and because of their limited opportunities to learn correct meanings from authoritative sources, such as books or adults with correct information, it is understandable that many of the concepts young children learn are inaccurate or actually faulty. This is especially true when they learn meanings from peers or from adults whose knowledge is limited if not actually faulty.

The seriousness of inaccuracies in concepts learned during the early childhood years is that they often become strongly entrenched beliefs before their inaccuracies are detected by adults. In G. Stanley Hall's classic study, "Contents of Children's Minds on Entering School," Hall and his co-workers found that many first-grade children had inaccurate concepts of everyday objects and experiences. One of their most quoted examples is the belief of many city children that butterflies are flies made of butter (52).

Just because early concepts are inaccurate does not mean that they cannot be corrected. They can be and they usually are. However, like all relearning, learning new meanings to replace faulty ones takes time that might better be spent on learning new meanings. Children, for example, who must learn, after they enter school, what butterflies actually are to replace their earlier-learned concepts could spend their learning time to greater advantage in learning something new.

The second common hazard in concept development in early childhood is the development of *concepts below the level of those of their peers*. If this happens, it can greatly affect children's personal and social adjustments. When, for example, young children have limited opportunities to associate with people outside the home, they do not develop the social concepts that would enable them to understand people better. As a result, they often say things that seem rude and tactless and their behavior tends to annoy and antagonize others.

The *emotional weighting* of concepts can present a third and even more serious hazard. When, for example, young children build up concepts of Christmas around Santa Claus, with its pleasurable emotional weighting, they will be resistant to changing their concepts of Christmas when they discover that there is no Santa Claus. Even worse, they will feel that they have been duped by those who told them about Santa Claus, and they will feel that Christmas means little to them now (17).

Moral Hazards There are four common hazards in moral development during early childhood. First, inconsistent discipline slows down the process of learning to conform to social expectations. When different people have different rules relating to the same behavior, such as where children may play with their toys, children are understandably confused about why what they did yesterday is regarded as wrong today. They are also confused and annoyed when they are punished severely for an act today which, yesterday, went unpunished or was only mildly reproved. This encourages them to be sly and to lie if threatened by punishment.

4. Speech development advances rapidly during early childhood as seen in improvement in comprehension as well as in the different speech skills. This has a strong impact on the amount of talking young children do and the content of their speech.
5. While emotional development follows a predictable pattern, there are variations in this pattern due to intelligence, sex, family size, child training, and other conditions.
6. Early childhood is the *pregang age*—the time when the foundations of social development, characteristic of the *gang age* of late childhood, are laid. It is also a time when companions play an important role in the socialization process.
7. Play in early childhood is greatly influenced by the motor skills children have acquired, the degree of popularity they enjoy among their age-mates, the guidance they receive in learning different patterns of play, and the socioeconomic status of their families.
8. Inaccuracies in understanding are common in early childhood because many childish concepts are learned with inadequate guidance and because children are often encouraged to view life unrealistically to make it seem more exciting and colorful.
9. Early childhood is characterized by *morality by constraint*—a time when children learn, through punishment and praise, to obey rules automatically. It is also the time when discipline differs, with some children subjected to authoritarian discipline while others are brought up by permissive or democratic discipline.
10. The common interests of early childhood include interest in religion, in the human body, in self, in sex, and in clothes.
11. Early childhood is often referred to as the *critical age* in sex-role typing because, at this time, the important aspects of sex-role typing are mastered, especially learning the meaning of sex-role stereotypes and accepting and playing the sex role approved for members of their sex.
12. Different family relationships—parent-child, sibling, and relationships with relatives—play roles of different degrees of importance in the socialization of young children and in their developing self-concepts.
13. The important physical hazards of early childhood include mortality, illnesses, accidents, unattractiveness, obesity, and left-handedness.
14. Among the most important psychological hazards of early childhood are unsocial content of speech, inability to establish the empathic complex, failure to learn social adjustments due to lack of guidance, preference for imaginary companions or pets, too much emphasis on amusements and too little on active play, unfavorable emotional weighting of concepts, inconsistent discipline or discipline that relies too much on punishment, failure to be sex-role typed in accordance with the approved pattern of the social group, deterioration in family relationships, and unfavorable self-concepts.
15. Happiness in early childhood depends more on what happens to children in the home than outside the home.

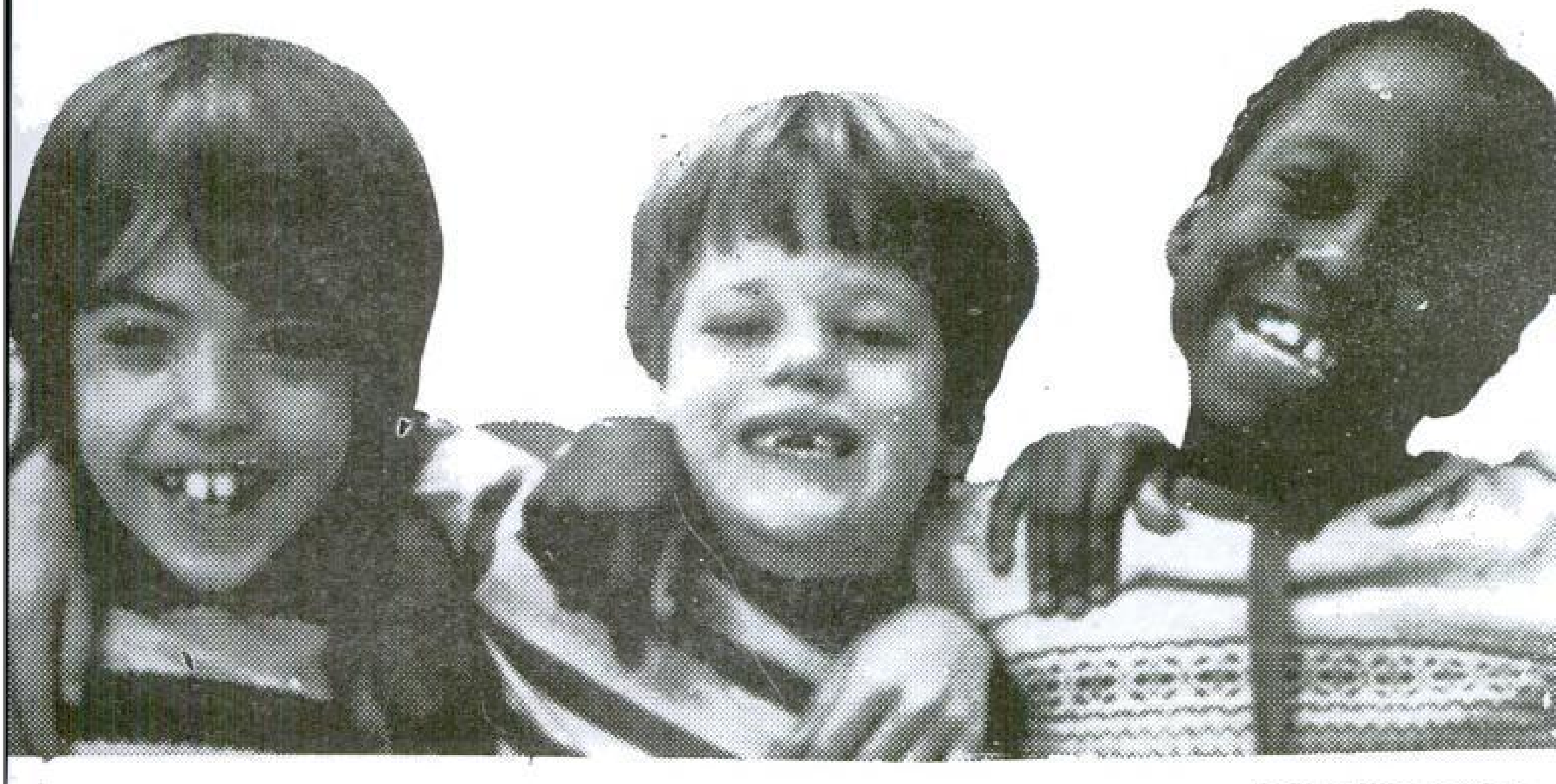
Bibliography

1. Alvy, K. T. Preventing child abuse. *American Psychologist,* 1975, **30**, 921–928.
2. Ames, L. B., and F. L. Ilg. The developmental point of view with special reference to the principle of reciprocal interweaving. *Journal of Genetic Psychology,* 1964, **105**, 195–209.
3. Ballard, B., and H. R. Keller. Development of racial awareness: Task consistency, reliability and validity. *Journal of Genetic Psychology,* 1976, **129**, 3–11.
4. Berndt, T. J., and E. G. Berndt. Children's use of motive and intentionality in person perception and moral judgment. *Child Development,* 1975, **46**, 904–912.
5. Bernstein, A. C. How children learn about sex and birth. *Psychology Today,* 1976, **9**(8), 31–35, 66.
6. Best, D. L., S. C. Smith, D. J. Graves, and J. E. Williams. The modification of racial bias in preschool children. *Journal of Experimental Child Psychology,* 1975, **20**, 193–205.
7. Bettelheim, B. *The uses of enchantment: The meaning and importance of fairy tales.* New York: Knopf, 1976.
8. Blank, M. Cognitive functions of language in the preschool years. *Developmental Psychology,* 1974, **10**, 229–245.
9. Bloom, L., P. Lightbrown, and L. Hood. Structure and variation in child language. *Monographs of the Society for Research in Child Development,* 1975, **40**(2).
10. Braine, M. D. S. Children's first word combinations. *Monographs of the Society for Research in Child Development,* 1976, **41**(1).
11. Bruner, J. S. Play is serious business. *Psychology Today,* 1975, **8**(8), 80–83.
12. Bruner, J. S., A. Jolly, and K. Sylva (Eds.). *Play: Its role in development and evolution.* New York: Library of Human Behavior, 1977.
13. Buck, R. Nonverbal communication of affect in children. *Journal of Personality & Social Psychology,* 1975, **31**, 644–653.
14. Burnett, C. N., and E. W. Johnson. Development of gait in childhood. *Developmental Medicine & Child Neurology,* 1971, **13**, 207–215.
15. Cherry, L., and M. Lewis. Mothers and two-year-olds: A study of sex-differentiated aspects of verbal interaction. *Developmental Psychology,* 1976, **12**, 278–282.
16. Croake, J. W. Fears of children. *Human Development,* 1969, **12**, 239–247.
17. Cummins, S., N. Gams, and L. Zusne. Another note on Santa Claus. *Perceptual & Motor Skills,* 1971, **32**, 510.

CHAPTER SIX
LATE CHILDHOOD

After reading this chapter, you should be able to:

- List common names used by parents, educators, and psychologists as indicators of the important characteristics of the late childhood years.
- Describe the patterns of physical, motor, speech, and emotional development in late childhood and recognize the advancement in these areas since early childhood.
- Explain new social groupings in late childhood and point out their influence on children's play interests and activities.
- Stress the influence of increased understanding on moral attitudes and behavior in late childhood and on children's interests.
- Point out the effects of sex-role typing and family relationships on older children's real and ideal self-concepts.
- Briefly describe the hazards of late childhood that are carry-overs of those from early childhood and those that may develop as a result of new conditions in the lives of older children.
- Discuss the new conditions in the lives of older children that influence the degree of happiness they experience.



BOX 6-1

PHYSICAL DEVELOPMENT IN LATE CHILDHOOD

Height

The annual increase in height is 2 to 3 inches. The average eleven-year-old girl is 58 inches tall, and the average boy of the same age is 57.5 inches tall. See Figure 6-2.

Weight

Weight increases are more variable than height increases, ranging from 3 to 5 or more pounds annually. The average eleven-year-old girl weighs 88.5 pounds, and the average boy of the same age weighs 85.5 pounds. See Figure 6-3.

Body Proportions

Although the head is still proportionally too large for the rest of the body, some of the facial disproportions disappear as the mouth and jaw become larger, the forehead broadens and flattens, the lips fill out, the nose becomes larger and acquires more shape. The trunk elongates and becomes slimmer, the neck becomes longer, the chest broadens, the abdomen flattens, the arms and legs lengthen (although they appear spindly and shapeless because of undeveloped musculature), and the hands and feet grow larger, but at a slow rate.

Homeliness

The body disproportions, so pronounced during late childhood, are primarily responsible for the increase in homeliness at this time. In addition, careless grooming and a tendency to wear clothes like those of peers, regardless of their becomingness, contribute to homeliness.

Muscle-Fat Ratio

During late childhood, fat tissue develops more rapidly than muscle tissue which has a marked growth spurt beginning at puberty. Children of endomorphic builds have conspicuously more fat than muscle tissue while the reverse is true of those of mesomorphic builds. Ectomorphs do not have a predominance of either, and this accounts for their tendency to look scrawny.

Teeth

By the onset of puberty, a child normally has twenty-eight of the thirty-two permanent teeth. The last four, the wisdom teeth, erupt during adolescence.

ence ceases to exist. As Laycock and Caylor have explained, "The gifted child probably comes from a home where all the children grow bigger" because of better nutrition and health care (82).

Sex differences in physical growth, relatively slight in earlier years, become more pronounced in late childhood. Because boys begin their puberty growth spurt approximately a year later than girls, they tend to be slightly shorter and lighter in weight than girls of the same age until they too become sexually mature. Girls also get their permanent teeth slightly earlier than boys, while boys' heads and faces grow larger than girls'.

To date, no foolproof method has been devised to predict the adult height of children during the late childhood years. Adult height is determined, to some extent, by parental stature, but it is also affected by how long children grow and at what rate during the years preceding puberty (21,109).

SKILLS OF LATE CHILDHOOD

At the beginning of late childhood, children have a remarkably large repertoire of skills that they learned during the preschool years. What skills older children learn depends partly on their environment, partly on the opportunities given them for learning, partly on their body builds, and partly on what is in vogue among their age-mates.

Marked sex differences, for example, exist not only in play skills at this age but also in the level of perfection of these skills. Girls, as a rule, surpass boys in skills involving finer muscles, such as painting, sewing, weaving, and hammering, while boys are superior to girls in skills involving the grosser muscles, such as throwing a basketball, kicking a soccer ball long distances, and doing broad jumps (39).

The socioeconomic status of the family likewise has a marked influence on the number and kind

BOX 6-3

SPECIAL VOCABULARIES OF LATE CHILDHOOD

Etiquette Vocabulary

By the end of the first grade, children who have had training at home in using such words as "please" and "thank you," have as large etiquette vocabularies as those of the adults in their environments.

Color Vocabulary

Children learn the names of all the common colors and many of the less common ones shortly after they enter school and begin to have formal training in art.

Number Vocabulary

From their study of arithmetic at school, children learn the names and meaning of numbers.

Money Vocabulary

Both in school and at home, older children learn the names of the different coins and they understand the value of the various denominations of bills.

Time Vocabulary

The time vocabularies of older children are as large as those of adults with whom they come in contact but their understanding of time words is sometimes incorrect.

Slang-Word and Swear-Word Vocabularies

Children learn slang words and swear words from older siblings and from the older children in the neighborhood. Using such words makes them feel "grown-up" and they soon discover that, in addition, the use of such words has great attention value. See Figure 6-4.

Secret Vocabularies

Children use secret vocabularies to communicate with their intimate friends. These can be *written,* consisting of codes formed by symbols or the substitution of one letter for another; *verbal,* consisting of distortions of words—pig Latin, for example; or *kinetic,* consisting of gestures and the use of fingers to communicate words. Most children start to use one or more of these forms at the time they enter the third grade, and their use reaches a peak just before puberty.

home environments, and it is even less true of children from bilingual homes.

Forming Sentences The six-year-old child should have command of nearly every kind of sentence structure. From six until the age of nine or ten, the length of sentences will increase. These long sentences are generally rambling and loosely knit. Gradually, after the age of nine, the child begins to use shorter and more compact sentences.

Improvement in Comprehension

With increased interest in group-belonging comes an increased interest in desire to communicate with group members. Children soon learn that meaningful communication cannot be achieved unless they understand the meaning of what others are saying to them. This provides the necessary incentive to improve their comprehension.

Improved comprehension is also aided by training in concentration in school. Children soon discover that they must pay attention to what is going on in class—what both the teacher and their classmates say—if they are to get along reasonably well with their lessons. In some schools, failure to concentrate is punished by having to stay after school or having to do extra work.

As is true of younger children, concentration is improved by listening to the radio and watching television, and this, in turn, improves comprehension. In addition, older children do not hesitate to ask questions about a word, a phrase, or even a sentence that is meaningless to them.

Perhaps the most important aid to improved comprehension comes from the shift that normally takes place from egocentric to socialized speech. So long as children are talking about themselves, they are thinking about themselves. This militates against

things with family members. They want to be with their peers and they are lonely and dissatisfied when they are not with them.

Even one or two friends are not enough for older children. They want to be with the gang, because only then will there be a sufficient number of individuals to play the games and sports they now enjoy and to give excitement to their play. From the time children enter school until puberty, the desire to be with and to be accepted by the gang becomes increasingly strong. This is just as true of girls as it is of boys.

Characteristics of Children's Gangs

Most people think of gangs as groups of hoodlums or mischief-makers because of the popular association of the term with juvenile delinquents. As used by child psychologists and sociologists, *children's* gangs are markedly different from *adolescent* gangs. For that reason, when speaking of gangs in childhood, it is customary to refer to them as *children's gangs* to distinguish them from adolescent gangs.

There are many ways in which children's gangs differ from adolescent gangs, four of which are especially common and important. First, the major purpose of children's gangs is to have fun; they are primarily play groups. By contrast, the major purpose of adolescent gangs is to cause trouble for others in retaliation for real or imagined slights on the part of the social group. Second, children's gangs are made up of children who are popular with their peers, while adolescent gangs are composed of those who have failed to gain peer acceptance and, as a result, band together in the desire to vent their revenge on those who have failed to accept them. Third, children's gangs rarely have members of both sexes, while adolescent gangs are more often composed of members of both sexes than members of one sex. And, fourth, children's gangs are composed of children of the same age and level of development whose interests and abilities are similar, while adolescent gangs are composed of individuals of different age levels and whose abilities and interests are not necessarily similar except that they all want to seek revenge on those who have refused to accept them.

Box 6-4 gives the outstanding characteristics of children's gangs. The most important of these characteristics is that gangs are social groups formed by children themselves, not by adults; that their major purpose is to have fun, not to engage in mischief or other forms of unsocial behavior; that they satisfy the social needs of older children; and, most important of all, that they are an important socializing agency in late childhood. While not all gangs have all of the characteristics listed in Box 6-4, they all serve the purpose of socializing children.

BOX 6-4

CHARACTERISTICS OF CHILDREN'S GANGS

- Children's gangs are play groups.
- To belong to a gang, a child must be invited.
- Members of a gang are of the same sex.
- At first gangs consist of three or four members, but this number increases as children grow older and become interested in sports.
- Boys' gangs more often engage in socially unacceptable behavior than girls' gangs.
- Popular gang activities include games and sports, going to the movies, and getting together to talk or eat.
- The gang has a central meeting place, usually away from the watchful eyes of adults.
- Most gangs have insignia of belonging; the members may wear similar clothes, for example.
- The gang leader represents the gang's ideal and is superior in most respects to the other members.

Effects of Gang Belonging

Figure 6-5 shows some of the most important ways in which belonging to a children's gang helps to socialize children. This comes primarily from conforming to the patterns of behavior, the values, and the attitudes of gang members (35). Unsure of their status and often afraid that they will be rejected by the gang unless they conform wholeheartedly to its standards, many older children bend over backward to be like their gang-mates in dress, behavior, and opinions, even when this means going against parental standards. It is upon this slavish conformity that socialization in late childhood is based (30,132). While conformity to peers persists throughout the latter childhood years, it usually reaches a peak between the ages of ten and eleven (135).

Group belonging is not without some unfavorable effects on children, four of which are very com-

sports, children whose skills in these areas are superior to those of the other gang members have a very good chance of being chosen as the leaders. However, skills alone are not enough. Children who play leadership roles must also have personality traits admired by the gang, such as good sportsmanship, cooperativeness, generosity, and honesty.

Unlike leaders during the preschool years, leaders in late childhood who use authoritarian and despotic techniques soon lose their leadership roles. Older children deeply resent being "bossed" by their playmates, just as they resent being "bossed" by their parents and teachers.

When the leadership role does not meet the child's needs or the needs of the group members, there is a shift to other leaders. If, on the other hand, children can play leadership roles to the satisfaction of group members and to their own satisfaction, there will be a persistence of leadership. Persistence enables children to learn the technique of leadership and to gain confidence in their abilities to carry out this role satisfactorily. Furthermore, if they gain the reputation among their gang-mates of being "good" leaders, they are likely to be chosen for other leadership roles. Children who play leadership roles in games and sports to the satisfaction of group members have a very good chance of being selected as class presidents or for other leadership roles unrelated to games and sports (74).

PLAY INTERESTS AND ACTIVITIES IN LATE CHILDHOOD

Because older children go to school and many have home duties, they have less time for play than they did during the preschool years. However, in the American culture of today, play is regarded as so important to children's physical and psychological development that all children, regardless of the socioeconomic status of their families, are given time and opportunities to play and encouragement to do so. In discussing the socializing effect of play, Lever has said, "During play children develop numerous social skills that enable them to enjoy group membership in the community of peers" (86).

While all older children play, how they play is more of an individual matter than it was during the early childhood years. The play activities of older children and the amount of time they devote to these activities will depend on how popular they are and whether or not they belong to gangs. Children who lack acceptance in a gang are forced to spend much of their playtime in solitary activities, such as making things or amusing themselves by watching television, listening to the radio, or reading.

During late childhood, both boys and girls are keenly aware of the sex-appropriateness of different types of play, and they shun play activities that they know are regarded as inappropriate for their sex, regardless of personal preference.

Bright children, especially as they grow older, are more solitary than social in their play, and they participate in fewer activities that involve strenuous physical play than children who are less bright. The kind of neighborhood in which the child lives also determines what opportunities there will be for play.

Regardless of these variations, for most children play becomes less active as childhood progresses, and such amusements as movies, radio, television, and reading gain in popularity. This shift is due partly to increased schoolwork and partly to additional home duties.

Constructive Play

Making things just for the fun of it, with little thought given to their eventual use, is a popular form of play among older children. Construction with wood and tools appeals to boys, while girls prefer finer types of construction, such as sewing, drawing, painting, clay modeling, and jewelry making.

Drawing, painting, and clay modeling gradually decrease in popularity as childhood advances, not so much because older children lose interest in these activities, but rather because they feel self-conscious if they are criticized by their classmates and teachers. Many children, however, enjoy these activities at home, in private, where they are less likely to be criticized or ridiculed for them. The drawings that older children do make are likely to be cartoons of their teachers, their classmates, or people in the news. This kind of drawing is generally done during school hours, when they are bored.

Singing is another form of creative play that older children enjoy. In most cases, they do not like to sing at school, during the music period when their singing is likely to be criticized, but rather with their friends when they are away from the listening ears of teachers and parents. Few boys make any serious attempt to sing well; they derive their fun just from

BOX 6-6

COMMON CATEGORIES OF CONCEPTS IN LATE CHILDHOOD

Life

While some older children find it difficult to understand that many things that move—a river, for example—are not alive, they become increasingly aware that movement is not the sole criterion of life.

Death

Children who experience the death of a family member or pet have a good understanding of the meaning of death, and the emotional weighting of their concepts of death is colored by the reactions of those around them.

Life after Death

Concepts of life after death depend mainly on the religious instruction children receive and on what their friends believe.

Bodily Functions

Until children begin to study hygiene in elementary school, many of their concepts about bodily functions are inaccurate and incomplete. This is especially true of internal bodily functions. See Figure 6-8.

Space

By using scales and rulers, children learn the meaning of ounces, pounds, inches, feet, and even miles. From reports of space exploration in the mass media, they develop concepts about outer space.

Numbers

Numbers take on new meanings as older children use money and work out arithmetic problems. By the time they are nine or ten years old, children understand number concepts to 1,000 and beyond.

Causality

Concepts of physical causality usually develop earlier than concepts of psychological causality. Children know, for example, what causes rain or snow earlier than what causes people to become angry.

Money

Children being to understand the value of various coins and bills when they start to use money. Opportunities to use money vary markedly and are greater in the lower socioeconomic-status families than in the upper.

Time

The rigid schedule of the school day enables children to develop concepts of what they can accomplish in a given period of time. Social studies in school and mass media help them to develop concepts of historical time.

Self

Children's concepts of themselves become clarified when they see themselves through the eyes of their teachers and classmates and when they compare their abilities and achievements with those of their peers.

Sex Roles

Not only do boys and girls develop clear concepts of approved sex roles, but before childhood is over they may also learn that the male role is apt to be considered more prestigious than the female role.

Social Roles

Older children are aware of their peers' social, religious, racial, and socioeconomic status and they accept cultural stereotypes and adult attitudes toward these statuses. This leads to group consciousness and, in many cases, to social prejudice.

Beauty

Older children tend to judge beauty in terms of group standards rather than according to their own aesthetic standards. What the group regards as beautiful or ugly, they accept as their own concepts.

The Comical

Older children's concepts of the comical are based partly on what they have observed others to perceive as funny and partly on what they themselves can comprehend, as in the case of riddles.

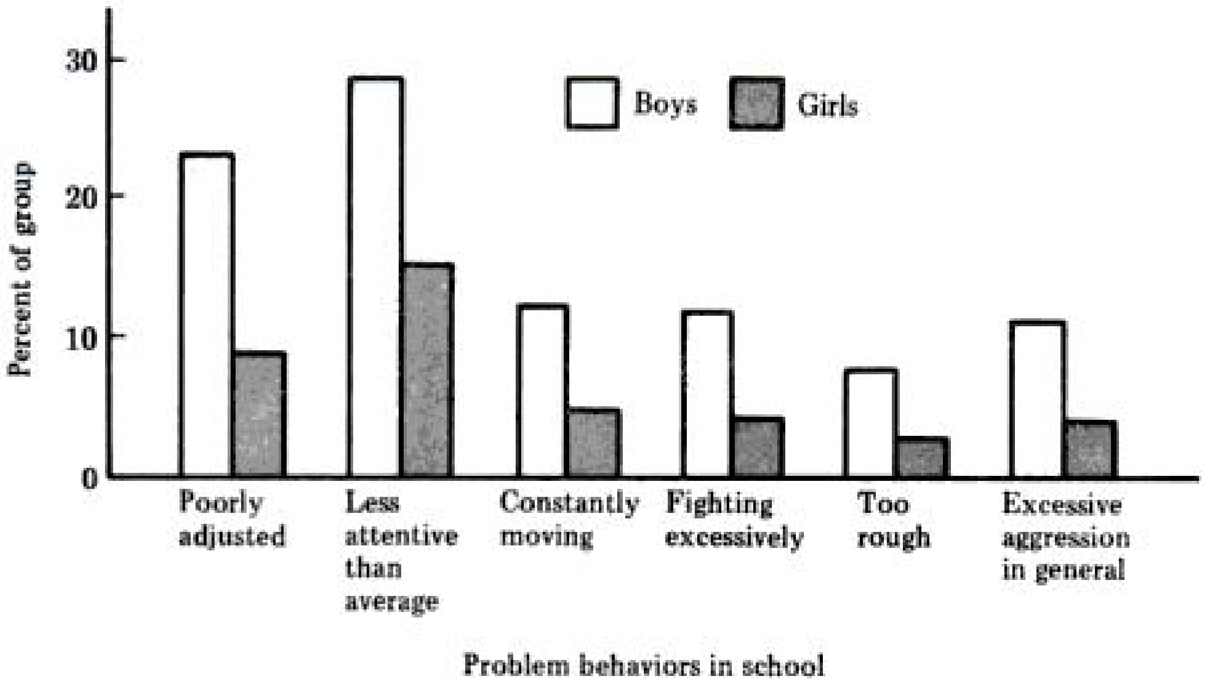


FIGURE 6-9 Percent of boys and girls, six to eleven years of age, found in a nationwide sample to commit different kinds of school misdemeanors. (Adapted from J. Roberts and J. T. Bird. *Behavior patterns of children in school: United States.* Rockville, Md.: U.S. Department of Health, Education, and Welfare, 1972. Used by permission.)

hard to be mature in their behavior in the hopes of winning the autonomy they crave.

Third, achievements are always influenced by the kind and intensity of the individual's interests. The child who is interested in mathematics, for example, will work hard to get good grades in that subject, while the child who lacks interest in math will likely become an underachiever in this area.

Fourth, interests established in childhood often become lifetime interests. This is because interests lead to satisfaction. Children are likely to repeat activities related to their interests and thus these interests become habitual and may persist throughout life. Interest in painting or music in adulthood, for example, usually originated during childhood.

SEX-ROLE TYPING IN LATE CHILDHOOD

Sex-role typing, which began shortly after birth, now continues with new agencies playing important roles in the typing process. Among the new forces that play significant roles in the sex-typing process, teachers and school subjects are important because of the prestige children attach to the teacher role (83). The different mass media likewise play important roles in sex-role typing of children. As Nolan et al. have explained, "Children are covertly taught on television that boys are more significant persons than girls" (112). In the books they read, either in school or for pleasure, when men and women are shown holding the same job, males are typically pictured as directing the task (70). When mothers work outside the home, it affects girls' vocational aspirations and influences what girls think women should do (8).

Unquestionably the most important force in sex-role typing during the late childhood years comes from peer pressures. As was stressed earlier in this chapter, children must conform wholeheartedly to the beliefs, values, and patterns of behavior of the peer group if they want to be accepted members of children's gangs. This means that they must accept the sex-role stereotype of their gang-mates as a guide for their own behavior and they must accept the attitudes of their gang-mates toward their own and the opposite sex. Even more important, they must behave as their gang-mates consider appropriate, whether this be to treat members of the other sex as inferior or to lower their levels of aspiration if their gang-mates believe they are aspiring too high for their sex group.

By the time children enter school, they have been sex-role typed according to the standard—traditional or egalitarian—accepted in their homes. However, after they come in contact with their age-mates in school and after the new forces in typing, described above, begin to be effective, they may change

BOX 6-10

COMMON CONDITIONS CONTRIBUTING TO DETERIORATION IN FAMILY RELATIONSHIPS IN LATE CHILDHOOD

Attitudes toward Parenthood

Parents who perceive their roles unfavorably and feel that the time, effort and money expended on their children are unappreciated tend to have poor relationships with their children.

Parental Expectations

By the time children enter school, many parents have high expectations about the quality of their schoolwork and the amount of responsibility they will assume in the home. When children fail to meet these expectations, parents often criticize, nag, and punish.

Child-Training Methods

Authoritarian child training, commonly used in large families, and permissive discipline, used mainly in small families, both lead to friction in the home and feelings of resentment on the child's part. Democratic discipline fosters good family relationships.

Socioeconomic Status

If children feel that their homes and possessions compare unfavorably with those of their peers, they often blame their parents and the parents tend to resent this bitterly.

Parental Occupations

How peers feel about their fathers' occupations influences children's feelings both about the occupation and about their fathers. If their mothers work outside the home, children's attitudes toward their mothers are colored partly by how their friends feel about women working outside the home and partly by how many home responsibilities they are expected to assume.

Changed Attitudes toward Parents

From contacts with their friends' parents and as a result of what they read in books or see on television or in the movies, children build up concepts of an ideal mother and father. If their own parents fall short of these ideals, as they invariably do, they are likely to become critical of them and compare them unfavorably with the parents of their friends.

Sibling Friction

Older siblings frequently criticize the appearance and behavior of the younger child, who, in turn, likes to tease and bully even younger siblings. If parents attempt to put a stop to this, they are accused of playing favorites. The children may then gang up against them and the sibling whom they regard as the parental pet.

Changed Attitudes toward Relatives

Older children enjoy being with relatives less than they did when they were younger and tend to regard them as "too old" or "too bossy." When they are expected to be a part of a family gathering, they often put up a protest and claim that family gatherings "bore" them. Relatives resent these attitudes and frequently reprove the children.

Stepparents

Older children who remember a real parent who is no longer in the home usually resent a stepparent and show it by critical, negativistic, and generally troublesome behavior. This leads to friction in the home.

happy family relationships lead to motivation to achieve, while unwholesome, unhappy relationships cause emotional tension which usually has a detrimental effect on a child's abilities to concentrate and to learn.

Second, family relationships affect social adjustments outside the home. When family relationships are favorable, children's social adjustments to people outside the home are better than when family relationships are stressful.

Third, role-playing in the home sets the pattern for role-playing outside the home. The reason for this is that the roles children learn to play in the home and the kind of relationships they have with their siblings form the basis for their relationships with peers outside the home. This, in turn, influences children's patterns of behavior toward their peers.

Fourth, the type of child-training method used in the home influences the role-playing of older children. When authoritarian child-training methods are

As is true of earlier ages, the hazards of late childhood are both physical and psychological. However, during late childhood the psychological repercussions of many of the physical hazards are especially serious, and major emphasis will be placed on these.

Physical Hazards

As a result of new medical techniques for diagnosing, preventing, and treating illnesses, mortality during late childhood occurs much less frequently than in the past. However, accidents still cause death among older children.

While many of the physical hazards of the earlier years persist into late childhood, their effects on the child's physical well-being tend to be less severe and less far-reaching than they were earlier. On the other hand, their psychological effects are greater and more persistent. The major physical hazards of late childhood are discussed below.

Illness Since vaccines against most childhood diseases are now available, older children suffer mainly from occasional colds and stomach upsets which rarely have any lasting physical effects.

The psychological effects of illness in late childhood, however, can be serious. Illness upsets the body's homeostasis, which in turn makes children irritable, demanding, and difficult to live with. If they are sick for a long period, their schoolwork may suffer and they may fall behind their peers in the learning of play skills. Equally serious, parents may become intolerant in their attitudes toward the illnesses, complaining about the extra work and the expense the illnesses entail.

While most illnesses of late childhood are real, some are imaginary or "faked." Sooner or later most children learn that when they are ill they are not expected to carry out their usual activities, home discipline is relaxed, and they receive more attention than usual. As result, they may feign illness—or actually believe they are ill—as a way of avoiding an unpleasant task or situation. If this tactic works, they will repeat it and thus lay the foundations for a proneness to imaginary illness.

Obesity Obesity in older children may be due to a glandular condition but it is far more often due to overeating, especially of the carbohydrates. Studies of fat children have revealed that they eat faster, take bigger bites and are more likely to clean their plates and ask for second or even third helpings than their more slender age-mates (95).

Regardless of its cause, obesity in older children is a physical hazard not only to their health—obese children are more prone to diabetes, for example, than their more slender age-mates—but to their socialization. Obese children lose out in active play and, as a result, they miss opportunities to acquire the skills so essential to social success. In addition, their playmates often tease and taunt them, calling them "Fatso" or other names that make them feel inferior or martyred.

Sex-Inappropriate Body Build Girls with masculine body builds and boys with girlish physiques are likely to be ridiculed by their peers and pitied by adults. This leads to personal and social maladjustment, though more so for boys than for girls. By contrast, a sex-appropriate body build aids good adjustment. In speaking about boys, Biller and Borstelmann have explained (17):

> *The tall and husky or mesomorphic boy may, even without the encouragement of parents, find success easier in masculine activities so that he is seen by others, and consequently learns to see himself, as very masculine. The frail ectomorph or pudgy endomorph may find such success difficult so that he may be seen by others, and learn to see himself, as unmasculine.*

Accidents Even when accidents leave no permanent physical scar, they can and often do, leave psychological scars. Older children, like younger, who experience more than their share of accidents, usually learn to be more cautious. In time, this may lead to timidity concerning all physical activities and may even spread to other areas of behavior. When this happens it develops into a generalized shyness that affects social relationships, schoolwork, and personalities (19).

Physical Disabilities Many physical disabilities are the aftereffect of an accident and thus are more common among boys than girls. The seriousness of the aftereffect depends on the degree of the disability and on the way others treat the child, especially members of the peer group. While some children may show

understanding what others are talking about or of not being understood when they try to communicate with others.

Unless some unusual condition exists in the family life of older children, they will have ample opportunity for play and the equipment needed for play as their age-mates play. If they enjoy reasonable social acceptance, their play can be a source of daily happiness.

As school begins to occupy an increasingly large part of the time of older children, how they feel about school can be a source of happiness or unhappiness. Children who do well academically, who get along well with their teachers and classmates, and who enjoy learning new things will have an added reason to be happy.

Even though older children spend increasingly more time outside the home than in it, the home climate and the relationships they have with different family members are two vitally important factors in their happiness. If older children have a warm, affectionate relationship with their families, even though there may be occasional friction and occasional punishment for intentional misbehavior, they will feel that their families love them and treat them fairly. Their happiness will be greatly increased if the home climate is relaxed and cheerful.

While happiness in the closing years of childhood will not guarantee happiness for the remainder of life, the conditions that contribute to happiness then will likewise contribute to happiness as the child grows older. Even though new values are used in the selection of friends in adolescence and adulthood, the individual who learned to be socially acceptable to others when young has a foundation on which to build new patterns of behavior to conform to the new values.

Similarly, children who have learned to see themselves realistically, and whose failures either motivate them to find better ways of achieving their goals or cause them to modify their aspirations in accordance with their capacities, will, as they grow older, be spared the unhappiness that comes from repeated failures and the feelings of inadequacy and inferiority that accompany them. This is just as true in the case of social failures as in the case of academic or business failures.

When it is apparent that one or more of the three A's of happiness—achievement, acceptance by others, and affection from others—are not present in a child's life, this should be regarded as a danger signal of future trouble. If an individual is not happy at a time when conditions are favorable to happiness, it suggests that the child is poorly equipped to face later periods when conditions will be less favorable.

Chapter Highlights

1. Late childhood, which extends from six years until children become sexually mature at approximately age thirteen for girls and fourteen for boys, is labeled by parents as the "troublesome," "sloppy," or "quarrelsome" age; by educators as the "elementary-school" age; and by psychologists as the "gang age," the "age of conformity," or the "age of creativity."
2. Physical growth, which is at a slow and relatively even rate in laté childhood, is influenced by health, nutrition, immunization, sex, and intelligence.
3. The skills of late childhood can be categorized roughly into four major groups: self-help skills, social-help skills, school skills, and play skills. All of these are influenced, to some extent, by the development of handedness.
4. While all areas of soeech—pronunciation, vocabulary, and sentence structure—improve rapidly during late childhood, as does comprehension, the content of speech tends to deteriorate.
5. Older children learn to control the overt expressions of their emotions and to use emotional catharsis to clear their systems of the pent-up emotionality caused by social pressures to control their emotions.
6. Late childhood is called the "gang age" because older children are interested in activities with their peers and want to belong to a gang, which expects them to conform to the patterns of behavior and to the values and interests of its members. As gang members, children often reject parental standards, develop an antagonistic attitude toward members of the opposite sex, and become prejudiced against all who are non-gang members.
7. The sociometric status of older children varies from popular to that of social isolate. Once a child's status is established in the social group, it is difficult to change—whether the status is that of leader, follower, or social isolate.
8. The play interests of older children and the amount of time they devote to play depends

117. Pieper, E. Grandparents can help. *The Exceptional Parent,* 1976, **6**(2), 6–10.

118. Pitts, V. P. *Concept development and the development of the God complex in the child: A bibliography.* Schenectady, N.Y.: Character Research Press, 1977.

119. Porter, C. S. Grade school children's perceptions of their internal body parts. *Nursing Research,* 1974, **23**, 384–391.

120. Prawat, R. S., and H. Jones. A longitudinal study of language development in children at different levels of cognitive development. *Merrill-Palmer Quarterly,* 1977, **23,** 115–120.

121. Prentice, N. M., and R. E. Fathman. Joking riddles: A developmental index of children's humor. *Developmental Psychology,* 1975, **11**, 200–216.

122. Pulaski, M. A. S. The rich rewards of make-believe. *Psychology Today,* 1974, **7**(8), 68–74.

123. *Reader's Digest* report. What TV does to kids. *Reader's Digest,* June 1977, Pp. 81–84.

124. Redl, F. Disruptive behavior in the classroom. *School Review,* 1975, **83**, 569–594.

125. Rekers, G. A., H. D. Amaro-Plotkin, and B. P. Low. Sex-typed mannerisms in normal boys and girls as a function of sex and age. *Child Development,* 1977, **48**, 275–278.

126. Rich, J. Effects of children's physical attractiveness on teachers' evaluations. *Journal of Educational Psychology,* 1975, **67**, 599–609.

127. Roberts, J., and J. T. Baird. *Behavior patterns of children in school.* Rockville, Md: Public Health Service, U.S. Department of Health, Education, and Welfare, 1972.

128. Robinson, W. P. Boredom at school. *British Journal of Educational Psychology,* 1975, **45**, 141–152.

129. Romen, N. The motive to avoid success and its effect on performance in school-age males and females. *Developmental Psychology,* 1975, **11**, 689–699.

130. Rossiter, J. R., and T. S. Robertson. Children's television viewing: An examination of parent-child consensus. *Sociometry,* 1975, **38**, 308–326.

131. Salva, J., R. Algozzine, and J. B. Sheare. Attractiveness and school achievement. *Journal of School Psychology,* 1977, **15**, 60–67.

132. Schachten, F. F., R. E. Marquis, S. A. Ganger, and R. M. McCaffery. Socialized speech. I. A proposed resolution of the controversy. *Journal of Genetic Psychology,* 1977, **130**, 305–321.

133. Scheresky, R. F. Occupational roles are sex-typed by six- to ten-year-old children. *Psychology in the Schools,* 1977, **14**, 220–224.

134. Shores, R. E., P. Hester, and P. S. Strain. The effects of amount and type of teacher-child interaction on child-child interaction during free play. *Psychology in the Schools,* 1976, **13**, 171–175.

135. Sigston, A., and D. G. White. Conformity in children as a function of age level. *British Journal of Social & Clinical Psychology,* 1974, **14**, 313–314.

136. Singer, J. L. Fantasy: The foundation of serenity. *Psychology Today,* 1976, **10**(2), 32–34, 37.

137. Sinnott, J. D., and B. M. Ross. Comparison of aggression and incongruity as factors in children's judgment of humor. *Journal of Genetic Psychology,* 1976, **128**, 241–249.

138. Skidgell, A. C., S. L. Witryol, and P. J. Wirzbicki. The effect of novelty-familiarity levels on material reward preference of first-grade children. *Journal of Genetic Psychology,* 1976, **128**, 291–297.

139. Stenner, A. J., and W. G. Katzenmayer. Self-concept, ability, and achievement in a sample of sixth-grade students. *Journal of Educational Research,* 1976, **69**, 270–273.

140. Sussman, G., and J. Justman. Characteristics of preadolescent boys judged creative by their teachers. *Gifted Child Quarterly,* 1975, **19**, 210–216.

141. Tanner, J. M. *Fetus into man: Physical growth from conception to maturity.* Cambridge, Mass.: Harvard University Press, 1978.

142. Trowbridge, N. Self-concept and IQ in elementary school children. *California Journal of Educational Research,* 1974, **25**, 37–49.

143. Turiel, E. A comparative analysis of moral knowledge and moral judgment in males and females. *Journal of Personality,* 1976, **44**, 195–208.

144. *U.S. News & World Report* article. TV violence and children. *U.S. News & World Report,* July 4, 1977, P. 74.

145. Van Camp, S. S., and M. B. Bixley. Eye and hand dominance in kindergarten and first-grade children. *Merrill-Palmer Quarterly,* 1977, **23,** 129–139.

146. Van den Daele, L. A developmental study of the ego-ideal. *Genetic Psychology Monographs,* 1968, **78**, 191–256.

147. Waldrop, M. F., R. Q. Bell, and C. D. Goering. Minor physical anomalies and inhibited behavior in elementay school girls. *Journal of Child Psychology & Psychiatry & Allied Disciplines,* 1976, **17,** 113–122.

148. Waldrop, M. F., and C. F. Halverson. Intensive and extensive peer behavior: Longitudinal and cross-sectional analysis. *Child Development,* 1975, **46,** 19–26.

149. Walls, R. T., R. A. Moxley, and S. P. Gulkus. Collection preferences of children. *Child Development,* 1975, **46**, 783–785.

150. Welkowitz, J., G. Cariffe, and S. Feldstein. Conversational congruence as a criterion of socialization in children. *Child Development,* 1976, **47,** 269–272.

151. White, E., B. Elsom, and R. Prawat. Children's conceptions of death. *Child Development,* 1978, **49,** 307–310.

152. Whiteman, M. Children's conceptions of psychological causality as related to subjective responsibility, conversation, and language. *Journal of Genetic Psychology,* 1976, **128,** 215–226.

153. Whiting, G. W. M., T. K. Landauer, and T. M. Jones. Infantile immunization and adult stature. *Child Development,* 1968, **39,** 59–67.

154. Wilson, K. L., L. A. Zurcher, D. C. McAdams, and R. L. Curtis. Stepfathers and stepchildren: An exploratory analysis from two national surveys. *Journal of Marriage & the Family,* 1975, **37,** 526–536.

155. Zeligs, R. *Children's experience with death.* Springfield, Ill.: Charles C Thomas, 1974.

156. Zimmerman, B. J., and G. H. Brody. Race and modeling influences on the interpersonal play patterns of boys. *Journal of Educational Psychology,* 1975, **67,** 591–598.

157. Zweigenhaft, R. L. The other side of unusual first names. *Journal of Social Psychology,* 1977, **103,** 291–302.

puberty and that the worst of the negative phase is over when the individual becomes sexually mature. There is also evidence that the behavior characteristic of the "negative phase" of puberty is more pronounced in girls than in boys (66,80).

Puberty Occurs at a Variable Age

Puberty can occur at any time between the ages of five or six and nineteen years. However, the average girl in the American culture of today becomes sexually mature at thirteen and the average boy, a year later. There are also variations in the amount of time needed to complete the transformation process of puberty. These range from two to four years with girls, on the average, requiring slightly less time than boys.

Variations in the age at which puberty occurs and in the time needed to complete the transformation process of puberty create many personal as well as social problems for both boys and girls. It is the variations in timing of puberty rather than the changes associated with it that make puberty one of the most difficult, even though one of the shortest, periods in the life span.

CRITERIA OF PUBERTY

The criteria most often used to determine the onset of puberty and to pinpoint a particular stage of puberty that the child has reached are the menarche, nocturnal emissions, evidence derived from chemical analysis of the urine and x-rays of bone development.

The *menarche,* or the first menstruation, is commonly used as a criterion of sexual maturity among girls, but it is neither the first nor the last of the physical changes that occur during puberty. When the menarche occurs, the sex organs and secondary sex characteristics have all started to develop, but none of them have yet reached a state of maturity. The menarche is more correctly considered a midpoint in puberty (21,66).

Among boys, a popularly used criterion of puberty is *nocturnal emissions.* During sleep, the penis sometimes becomes erect, and semen, or the fluid containing sperm cells, is released. This is a normal way for the male reproductive organ to rid itself of excessive amounts of semen. However, not all boys experience this phenomenon, and not all realize what it is. Furthermore, nocturnal emissions, like the menarche, occur after some puberty development has taken place and therefore cannot be used as an accurate criterion of the onset of puberty.

Chemical analysis of the first urine passed by boys in the morning has proved to be an effective technique for determining sexual maturity, as has analysis of girls' urine to see whether the female gonadotropic hormone, estrogen, is present. However, the practical difficulty of obtaining specimens of the early-morning urine of boys and girls limits the use of this method.

X-rays of different parts of the body, but especially the hands and knees, during the preadolescent growth spurt can reveal whether puberty has begun and the rate at which puberty is progressing. To date, this has proved to be the most dependable method of determining sexual maturity, though it, like the chemical analysis of early-morning urine, involves certain practical difficulties that make its widespread use unfeasible (65,71).

CAUSES OF PUBERTY

Until the turn of the present century, the cause or causes of the physical changes that occur at puberty remained a mystery. With the growth of research in the field of endocrinology, medical science has been able to pinpoint the exact causes of these changes though, to date, endocrinologists have been unable to explain the variations in the age of puberty and in the time needed to complete the changes of puberty.

At the present time, it is known that about five years before children become sexually mature, there is a small excretion of the sex hormones in both boys and girls. The amount of hormones excreted increases as time passes, and this eventually leads to the maturing of the structure and function of the sex organs.

It has been established that there is a close relationship between the pituitary gland, located at the base of the brain, and the gonads, or sex glands. The male gonads are the *testes,* and the female gonads are the *ovaries.* The roles they play in bringing about the changes of puberty are described in Box 7-2.

AGE OF PUBERTY

In the American culture of today, approximately 50 percent of all girls mature between 12.5 and 14.5 years, with the average maturing at 13. Figure 7-2 shows the ages of menarche. The average boy be-

You have either reached a page that is unavailable for viewing or reached your viewing limit for this book.

You have either reached a page that is unavailable for viewing or reached your viewing limit for this book.

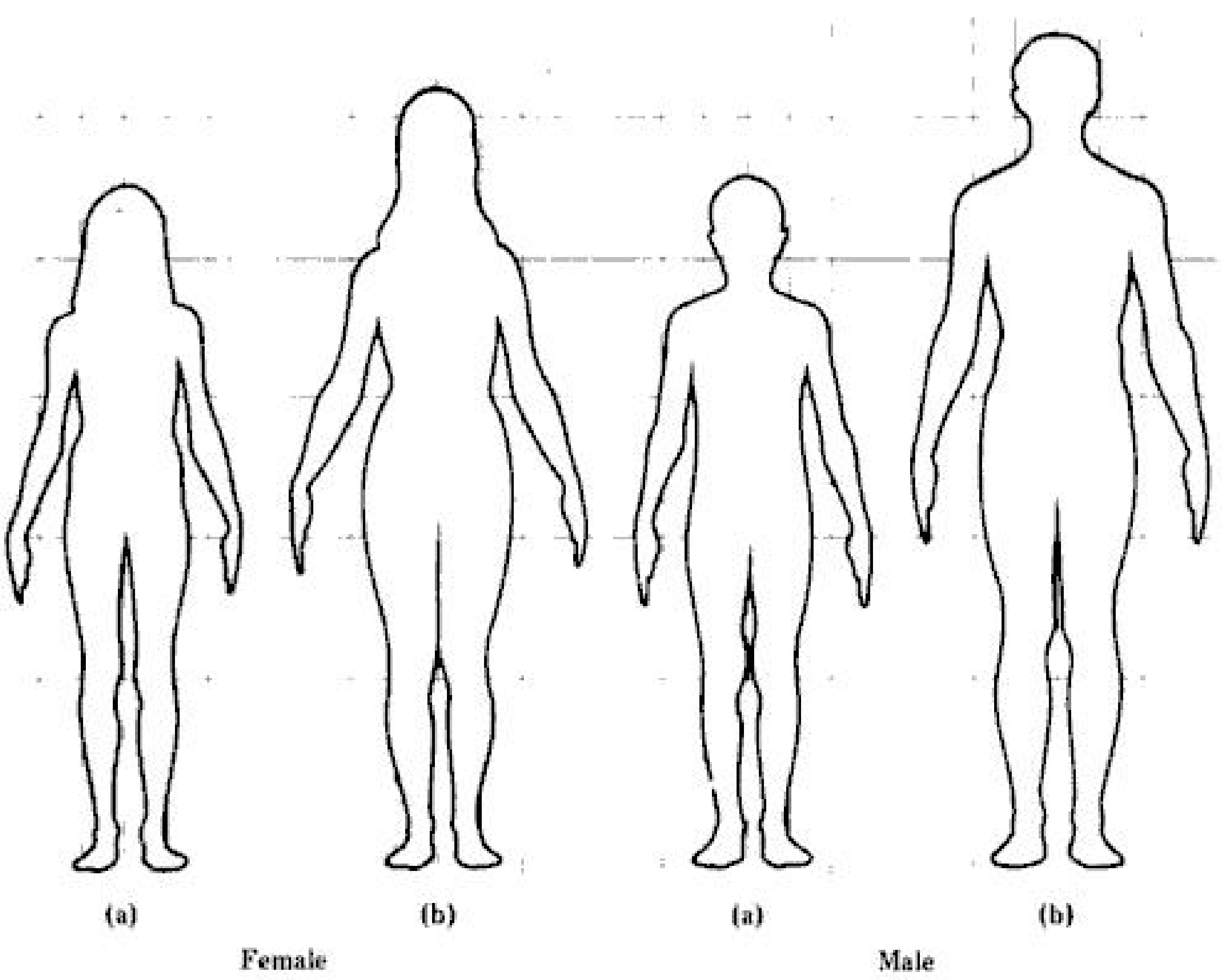


FIGURE 7-4 Changes in body proportions of boys and girls (a) before and (b) after puberty changes have been completed. (Adapted from J. M. Tanner. Growing up. *Scientific American*, 1973, **229**(3), 35–43. Used by permission.)

tive mechanism is becoming mature is the *menarche*, or first menstrual flow. This is the beginning of a series of periodic discharges of blood, mucus, and broken-down cell tissue from the uterus that will occur approximately every twenty-eight days until the girl reaches the menopause, in the late forties or early fifties.

The girl's menstrual periods generally occur at very irregular intervals and vary markedly in length for the first year or so. This period is known as the *stage of adolescent sterility*. During this time ovulation, or the ripening and release of a ripe ovum from a follicle in the ovary, does not occur, and the girl is therefore sterile. Even after several menstrual periods, it is questionable whether the girl's sex mechanism is mature enough to make conception possible.

The puberty fat period in girls, which usually levels off between sixteen and eighteen years, coincides with the period of adolescent sterility. At this time there is rapid growth in length in the uterus and in the weight of the ovaries (24).

Secondary Sex Characteristics

The fourth major physical change at puberty is the development of the secondary sex characteristics. These are the physical features which distinguish males from females and which make members of one sex appealing to members of the other sex. They are unrelated to reproduction though indirectly they are related by making males appealing to females and vice versa. That is why they are called "secondary" as compared with the sex organs proper which are called "primary" sex characteristics because they are directly related to reproduction. As long as the body remains childlike in appearance, there is no "sex appeal." This, however, changes when the secondary sex characteristics appear.

As puberty progresses, boys and girls become increasingly dissimilar in appearance. This change is caused by the gradual development of the secondary sex characteristics which, like other developments at puberty, follows a predictable pattern.

The pattern of development of several of the

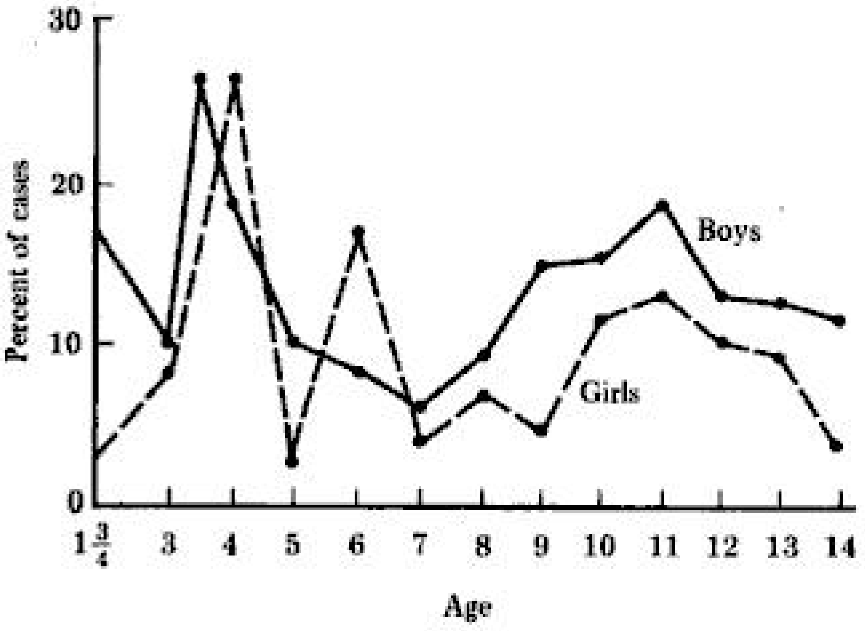


FIGURE 7-6 Irritability tends to increase early in puberty and then to decline. (Adapted from J. Macfarlane, L. Allen, and M. P. Honzik. *A developmental study of the behavior problems of normal children between twenty-one months and fourteen years.* Berkeley: University of California Press, 1954. Used by permission.)

their behavior patterns are at the appropriate developmental levels. However, children who are maturationally unready to fulfill the social expectations for their ages are likely to have problems.

EFFECTS OF DEVIANT MATURING

Children who are most affected by the physical changes that normally occur at puberty are the deviant maturers. A *deviant maturer* is one whose sexual maturation deviates by a year or more from the norm for the individual's sex group, in the time at which sexual maturation occurs, or by a year or more from the norm for the individual's sex group in the time needed to complete the maturation process. Children who mature sexually earlier than their sex group are called "early maturers" while those who mature sexually later than their sex group are called "late maturers." When children require less than the normal time for their sex group to complete the maturational process they are known as "rapid maturers" while those who need more than the normal time are called "slow maturers."

Early versus Late Maturers

For *boys*, early maturing is advantageous, especially in the area of sports, from which they derive much of their prestige and status in the peer group. It is from the ranks of the early maturers that most of the leaders in boys' groups come, and this gives them added prestige in the eyes of girls also.

By contrast, boys who are late maturers tend to be restless, tense, rebellious, and attention-seeking. Because of these unsocial patterns of behavior, they are less popular with both peers and adults and are far less often selected for leadership roles by their peers than early maturers are. In commenting on the disadvantages of late maturing for boys, Weatherley has pointed out the following problems (95).

> *The later maturer must cope with the developmental demands of the junior high and high school period with the liability of a relatively small, immature appearing physical stature. His appearance is likely to call out in others at least mild reactions of derogation and the expectation that he is capable of only ineffectual, immature behavior. Such reactions constitute a kind of social environment which is conducive to feelings of inadequacy, insecurity and defensive "small-boy" behavior. Such behavior once initiated may well be self-sustaining, since it is likely to only intensify the negative environmental reactions which gave rise to it in the first place.*

Early maturing is less advantageous to *girls* than it is to boys. Early-maturing girls are more grown-up and sophisticated in their behavior, but their appearance and actions may lead to a reputation of being "sexually promiscuous." In addition, early-maturing girls are more out of step with their peers than early-maturing boys, and this adds to their social problems. In commenting on the social problems the early-maturing girl is confronted with, Jones and Mussen have pointed out (39):

> *The early-maturing girl quite naturally has interests in boys and in social usages and activities more mature than those of her chronological age group. But the males of her own age are unreceptive, for while she is physiologically a year or two out of step with the girls in her class, she is three or four years out of step with the boys—a vast and terrifying degree of developmental distance.*

Girls who are late maturers are less damaged psychologically than late-maturing boys. They are less likely to engage in status-seeking behavior than boys, though they are concerned about their normalcy, which they reflect in shy, retiring, diffident be-

Typically, a feminine woman is supposed to have a beautiful complexion. As puberty progresses, acne usually gets worse rather than better, and facial hair is darker and more profuse than in the early stages of puberty, which frequently alarms the girl.

HAZARDS OF PUBERTY

The hazards of puberty are generally serious mainly in terms of their long-range consequences. This contrasts with the earlier stages of development, when the hazards themselves tend to be more important than their long-term effects.

As is true of late childhood, the psychological hazards of puberty are more numerous and more far-reaching in their effects than the physical ones. Furthermore, only a small percentage of pubescent children are affected by the physical hazards, while *all* are affected by the psychological ones, though to varying degrees.

Physical Hazards

Even though most pubescent children do not feel up to par physically, actual illness is less common during this period than at earlier ages. Mortality also occurs infrequently among pubescent children. Since they rarely suffer from illnesses severe enough to lead to death and since they are so inactive and socially withdrawn that accidents—a common cause of death in the years preceding and following puberty—are infrequent, there is less likelihood of mortality at this time than in the earlier or even the postpubescent years. Actually, many deaths reported as due to accidents are the result of suicide which pubescent children may attempt if they become severely depressed.

The major physical hazards of puberty are due to slight or major malfunctioning of the endocrine glands that control the puberty growth spurt and the sexual changes that take place at this time. Box 7-6 describes the effect of glandular malfunctioning on development.

Psychological Hazards

There are many psychological hazards of puberty, the long-term effects of which are even more important than the immediate effects. It is this that makes the psychological hazards so serious. Some of the most important of the psychological hazards of puberty are discussed below.

BOX 7-6

EFFECTS OF ENDOCRINE IMBALANCE AT PUBERTY

Insufficient Growth Hormone

An insufficient amount of growth hormone in late childhood and early puberty causes the individual to be smaller than average at maturity.

Insufficient Gonadal Hormones

If the gonadal hormones are not released in adequate amounts soon enough to check the growth hormone, growth of the limbs continues too long, and the individual becomes larger than average. Insufficient amounts of gonadal hormones also affect the normal development of the sex organs and the secondary sex characteristics, with the result that the individual remains childlike or takes on characteristics of the opposite sex, depending on when the interruption in the developmental cycle occurs.

Excessive Supply of Gonadal Hormones

An imbalance in the functioning of the pituitary gland and the gonads can cause production of an excessive amount of gonadal hormones at a very young age, resulting in the onset of puberty sometimes as early as five or six years of age. This is known as precocious puberty or *puberty precox*. While such children are sexually mature in that their sex organs have begun to function, they are still small in stature and the secondary sex characteristics are not as well developed as in those who mature at the usual age.

Unfavorable Self-Concepts Few children pass through puberty without developing unfavorable self-concepts. This is true even of those who, earlier, had good opinions of themselves and who, as a result, had enough self-confidence to play leadership roles in their peer groups.

There are many reasons for the development of unfavorable self-concepts during puberty, some of which may be personal in origin and some environmental. Almost all pubescents have unrealistic concepts about what their appearance and abilities will be when they are grown up, concepts that often trace their origin to childhood days when the ideal self-

Serious as the immediate effects of deviant sexual maturing are to children's personal and social adjustments, the *long-term effects* are even more serious. Studies have documented what these long-term effects on behavior are, some of which will be discussed in detail below.

In the case of slow maturers, damage results from the fact that they have longer than average time during which to develop the undesirable patterns of behavior associated with puberty, although this need not necessarily be permanently handicapping.

Some, it is true, may develop into habitual daydreamers; some may develop a hypercritical, frictional attitude toward others; and some may develop into restless people who find it difficult to concentrate on any task. But if their desire for social acceptance is strong enough and if they are able to achieve a reasonable amount of social acceptance, they will be sufficiently motivated to break these habits and replace them with more socially acceptable patterns of behavior.

Not all those who deviate from the norm—the early and late maturers—are damaged permanently by this. Some, in fact, benefit, not only during puberty, but in later years as well. Although studies of the long-term effects on behavior have so far been limited to boys, evidence from these studies and knowledge of the effects of reinforcement through repetition enable us to hazard a guess concerning what the long-term effects on girls might be.

Early-maturing boys normally become socially active and popular, holding leadership roles in the peer group. They have assets that are valued in the peer group, and as a result of repetition, these develop into habitual patterns of behavior. Follow-up studies of subjects into middle and early old age have shown these patterns of behavior to be persistent. As a result, the early maturers are more successful vocationally and socially as adults, just as they were during adolescence. Their success stems from the fact that they make better impressions on others than the normal or late maturers.

By contrast, middle-aged men who were late maturers were found to cling to the "little-boy" patterns of behavior which caused them to be unpopular when they were younger. Thus late maturers tend to be less active socially, less successful in business, and less likely to be selected for leadership roles than might be expected on the basis of their abilities (2,38, 77).

Speculation about the long-term effects of deviant maturing on girls leads one to believe that early maturers who were embarrassed about being larger than their contemporaries and who often developed aggressive patterns of behavior to attract the attention of boys will continue to show similar patterns of behavior as adult women. Late maturers, by contrast, who were better adjusted personally and socially in adolescence, are likely to continue to be so during adulthood, unless conditions unrelated to sexual maturing interfere with this pattern.

UNHAPPINESS AT PUBERTY

The "three A's of happiness," acceptance, affection, and achievement, discussed in detail in Chapter 1, are often violated during the puberty years. Hence it is questionable whether any pubescent child is or can be really happy or even partially satisfied with life under such conditions.

The first essential of happiness is *acceptance*, both self-acceptance and social acceptance. To be satisfied with their lives to the point that they can consider themselves happy, pubescents must not only like and accept themselves but must also feel that they are accepted by others. The more they can like and accept themselves, the happier they will be. Similarly, the more people there are whom they want to like and accept them, the more satisfied they are with their status in the social group.

It is difficult for pubescent children to be self-acceptant when they are anxious and concerned about their changing bodies and dissatisfied with their appearance. Furthermore, the realization of the increasingly important role that appearance plays in social acceptance adds to their worries. The more concerned pubescent children are about social acceptance, the more concerned they will be about their appearance. Girls tend to worrry more about their looks than boys because they realize that appearance plays a more important role in their social acceptance than it does in boys'.

Studies of pubescent children who are dissatisfied with their looks have pinpointed the areas of greatest concern. Girls, for example, want to have a good figure. Boys want to be tall, since they associate this with masculinity, and very tall girls want to be shorter to conform to the stereotype for their sex. Boys want to be heavier than they are, and girls want to be

48. MacMahon, B. *Age at menarche: United States*. Rockville, Md: National Center for Health Statistics, U. S. Department of Health, Education, and Welfare. 1973.

49. Malino, R. M. Adolescent changes in size, build, composition, and performance. *Human Biology*, 1974, **46**, 117–131.

50. Marshall, W. A., and J. M. Tanner. Variations in pattern of pubertal changes in girls. *Archives of Disease in Childhood*, 1969, **44**, 201–203.

51. Marshall, W. A., and J. M. Tanner. Variations in the pattern of pubertal changes in boys. *Archives of Disease in Childhood*, 1970, **45**, 13–23.

52. Masterson, J. G. True precocious puberty. *Annals of the New York Academy of Sciences*, 1967, **142**, 778–782.

53. Meredith, H. V. Body size of contemporary youth in different parts of the world. *Monographs of the Society for Research in Child Development*, 1969, **34**(7).

54. Meredith, H. V. Somatic changes during human postnatal life. *Child Development*, 1975, **46**, 603–610.

55. Miller, A. C. Role of physical attractiveness in impression formation. *Psychonomic Science*, 1970, **19**, 241–243.

56. Money, J., and R. R. Clopper. Psychosocial and psychosexual aspects of errors of pubertal onset and development. *Human Biology*, 1974, **46**, 173–181.

57. Money, J., and A. A. Erhardt. *Man and woman: Boy and girl. Differentiation and dimorphism of gender identity from conception to maturity*. Baltimore, Md.: Johns Hopkins Press, 1973.

58. Money, J., and G. Wolff. Late puberty, retarded growth and reversible hyposamatotropinism (psychological dwarfism). *Adolescence*, 1974, **9**, 121–134.

59. More, D. M. Developmental concordance and discordance during puberty and early adolescence. *Monographs of the Society for Research in Child Development*, 1953, **18**, 1–128.

60. Muuss, R. E. Adolescent development and the secular trend. *Adolescence*, 1970, **5**, 267–284.

61. Muuss, R. E. Puberty rites in primitive and modern societies. *Adolescence*, 1970, **5**, 109–128.

62. Newton, M., and M. Issekutz-Wolsku. The rate of female maturation. *Gerontologia*, 1969, **15**; 328–331.

63. Onat, T. Prediction of adult height of girls based on the present age of adult height at onset of secondary sex characteristics, at chronological age, and skeletal age. *Human Biology*, 1975, **47**, 117–130.

64. Onat, T., and B. Erfem. Adolescent female height velocity: Relationships to body measurements, sexual and skeletal maturity. *Human Biology*, 1974, **46**, 199–217.

65. Onat, T., and E. Numan-Cobeci. Sesamed bones of the hand: Relationship to growth, skeletal and sexual development. *Human Biology*, 1976, **48**, 559–576.

66. Parker, E. *The seven ages of woman*. Baltimore, Md.: Johns Hopkins Press, 1960.

67. Poppleton, P. K. The secular trend in puberty: Has stability been achieved? *British Journal of Educational Psychology*, 1966, **36**, 95–100.

68. Poppleton, P. K. Puberty, family size, and the educational progress of girls. *British Journal of Educational Psychology*, 1968, **38**, 286–292.

69. Prader, A., J. M. Tanner, and G. E. Von Hamack. Catch-up growth following illness or starvation. *Journal of Pediatrics*, 1963, **62**, 646–659.

70. Rakoff, A. E. Menstrual disorders of the adolescent. *Annals of the New York Academy of Sciences*, 1967, **142**, 801–806.

71. Roche, A. F., and G. H. Davila. The reliability of assessments of the maturity of individual hand-wrist bones. *Human Biology*, 1976, **48**, 585–597.

72. Roche, A. F., N. Y. French, and G. H. Davila. Areola size during pubescence. *Human Biology*, 1971, **43**, 210–223.

73. Romer, N. The motive to avoid success and its effects on performance in school-age males and females. *Developmental Psychology*, 1975, **11**, 689–699.

74. Root, A. W. Endocrinology of puberty: I. Normal sexual maturation. *Journal of Pediatrics*, 1973, **83**, 1–19.

75. Root, A. W. Endocrinology of puberty: II. Aberrations of sexual maturation. *Journal of Pediatrics*, 1973, **83**, 187–200.

76. Schonfeld, W. A. The body and the body image in adolescents. In G. Caplan and S. Lebovici (Eds.). *Adolescence: Psychosocial perspectives*. New York: Basic Books, 1969, Pp. 27–53.

77. Sears, R. R. Sources of life satisfaction of the Terman gifted men. *American Psychologist*, 1977, **32**, 119–128.

78. Shaffer, D. Suicide in childhood and early adolescence. *Journal of Child Psychology & Psychiatry & Allied Disciplines*, 1974, **15**, 275–291.

79. Sigurjonsdotter, T. J., and A. B. Haynes. Precocious puberty. *American Journal of Diseases of Children*, 1968, **115**, 309–321.

80. Sommer, B. B. *Puberty and adolescence*. New York: Oxford University Press, 1978.

81. Sullivan, W. Boys and girls are now maturing earlier. *The New York Times*, Jan. 24, 1971.

82. Tanner, J. M. Physical growth. In P. H. Mussen (Ed.). *Carmichael's manual of child psychology* (3rd ed.). Vol. 1. New York: Wiley, 1970, Pp. 77–155.

83. Tanner, J. M. Sequence, tempo, and individual variation in the growth and development of boys and girls aged twelve to sixteen. *Daedalus*, 1971, **100**, 907–930.

84. Tanner, J. M. Growing up. *Scientific American*, 1973, **229**(3), 35–43.

85. Tanner, J. M. *Fetus into man: Physical growth from conception to maturity*. Cambridge, Mass.: Harvard University Press, 1978.

86. Thomas, J. K. Adolescent endocrinology for counselors of adolescents. *Adolescence*, 1973, **8**, 394–406.

87. Thomas, W. D. Maturation age: Another dropout factor? *Canadian Counsellor*, 1972, **6**, 275–277.

88. Thompson, G. W., F. Popovich, and D. L. Anderson. Maximum growth changes in mandibular length, stature and weight. *Human Biology*, 1976, **48**, 285–293.

89. Thornburg, H. D. Educating the preadolescent about sex. *Family Coordinator*, 1974, **23**, 35–39.

90. Tonks, C. M., P. H. Rack, and M. J. Rose. Attempted suicide and the menstrual cycle. *Journal of Psychosomatic Research*, 1968, **11**, 319–323.

91. Valisk, J. A. The seasonal rhythm of the menarche: A review. *Human Biology*, 1965, **37**, 75–90.

92. Verinis, J. S., and S. Roll. Primary and secondary male characteristics: The hairiness and large penis stereotypes. *Psychological Reports*, 1970, **26**, 123–126.

93. Villee, D. B. *Human endocrinology*. Philadelphia: Saunders, 1975.

94. Waber, D. P. Sex differences in cognition: A function of maturation rate? *Science*, 1976, **192**, 572–574.

95. Weatherley, D. Self-perceived rate of physical maturation and

You have either reached a page that is unavailable for viewing or reached your viewing limit for this book.

cence covers the period from then until eighteen, the age of legal maturity. Late adolescence is thus a very short period.

Early adolescence is usually referred to as the "teens," sometimes even the "terrible teens." Although older adolescents are, strictly speaking, "teenagers" until they reach twenty years of age, the label *teenager,* which has become popularly associated with the characteristic pattern of behavior of young adolescents, is rarely applied to older adolescents. Instead, they are usually referred to "young men" and "young women"—or even "youths"—indicating that society recognizes a maturity of behavior not found during the early years of adolescence (101).

CHARACTERISTICS OF ADOLESCENCE

As is true of every important period during the life span, adolescence has certain characteristics that distinguish it from the periods that preceded it and the periods that will follow it. What these characteristics are will be explained briefly below.

Adolescence Is an Important Period

While all periods in the life span are important, some are more important than others because of their immediate effects on attitudes and behavior, whereas others are significant because of their long-term effects. Adolescence is one of the periods when both the immediate effects and long-term effects are important. Some periods are important for their physical and some for their psychological effects. Adolescence is important for both.

In discussing the physical effects of adolescence, Tanner has said (156):

> *For the majority of young persons, the years from twelve to sixteen are the most eventful ones of their lives so far as their growth and development is concerned. Admittedly, during fetal life and the first year or two after birth developments occurred still faster, and a sympathetic environment was probably even more crucial, but the subject himself was not the fascinated, charmed, or horrified spectator that watches the developments, or lack of developments, of adolescence.*

Accompanying these rapid and important physical developments, especially during the early adolescent period, rapid mental developments occur. These give rise to the need for mental adjustments and the necessity for establishing new attitudes, values and interests.

Adolescence Is a Transitional Period

Transition does not mean a break with or a change from what has gone before but rather a passage from one stage of development to another. This means that what has happened before will leave its mark on what happens now and in the future. Children, when they go from childhood to adulthood, must "put away childish things" and they must also learn new patterns of behavior and attitudes to replace those they have abandoned.

However, it is important to realize that what happened earlier has left its mark and will influence these new patterns of behavior and attitudes. As Osterrieth has explained, "The psychic structure of the adolescent has its roots in childhood and many of its characteristics that are generally considered as typical of adolescence appear and are already present during late childhood" (118). The physical changes that take place during the early years of adolescence affect the individual's behavioral level and lead to reevaluations and a shifting adjustment of values.

During any transitional period, the individual's status is vague and there is confusion about the roles the individual is expected to play. The adolescent, at this time, is neither a child nor an adult. If adolescents behave like children, they are told to "act their age." If they try to act like adults, they are often accused of being "too big for their britches" and are reproved for their attempts to act like adults. On the other hand, the ambiguous status of today's adolescents is advantageous in that it gives them time to try out different lifestyles and decide what patterns of behavior, values, and attitudes meet their needs best (58).

Adolescence Is a Period of Change

The rate of change in attitudes and behavior during adolescence parallels the rate of physical change. During early adolescence, when physical changes are rapid, changes in attitudes and behavior are also rapid. As physical changes slow down, so do attitudinal and behavioral changes.

There are five almost universal concomitants of the changes that occur during adolescence. The first is heightened emotionality, the intensity of which depends on the rate at which the physical and psychological changes are taking place. Because these

BOX 8-1

BODY CHANGES DURING ADOLESCENCE

External Changes

Height
The average girl reaches her mature height between the ages of seventeen and eighteen and the average boy, a year or so later. Refer to Figure 6-2. Boys and girls who were immunized during babyhood are usually taller, age for age, than those who were not immunized and who, as a result, suffered from more illnessses that tended to stunt their growth.

Weight
Weight changes follow a timetable similar to that for height changes, with weight now distributed over areas of the body where previously there was little or no fat.

Body Proportions
The various parts of the body gradually come into proportion. For example, the trunk broadens and lengthens, and thus the limbs no longer seem too long.

Sex Organs
Both male and female sex organs reach their mature size in late adolescence, but are not mature in function until several years later.

Secondary Sex Characteristics
The major secondary sex characteristics are at a mature level of development by late adolescence.

Internal Changes

Digestive System
The stomach becomes longer and less tubular, the intestines grow in length and circumference, the muscles in the stomach and intestinal walls become thicker and stronger, the liver increases in weight, and the esophagus becomes longer.

Circulatory System
The heart grows rapidly during adolescence; by the age of seventeen or eighteen, it is twelve times as heavy as it was at birth. The length and thickness of the walls of the blood vessels increase and reach a mature level when the heart does.

Respiratory System
The lung capacity of girls is almost at a mature level at age seventeen; boys reach this level several years later.

Endocrine System
The increased activity of the gonads at puberty results in a temporary imbalance of the whole endocrine system in early adolescence. The sex glands develop rapidly and become functional, though they do not reach their mature size until late adolescence or early adulthood.

Body Tissues
The skeleton stops growing at an average age of eighteen. Tissues, other than bone, continue to develop after the bones have reached their mature size. This is especially true of muscle tissue.

Variations in Physical Changes

As is true at all ages, there are individual differences in physical changes. *Sex differences* are especially apparent. Even though boys start their growth spurt later than girls, their growth continues longer, with the result that, at maturity, they are usually taller than girls. Because boys' muscles grow larger than girls' muscles, at all ages after puberty boys surpass girls in strength, and this superiority increases with age.

Individual differences are also influenced by *age of maturing*. Late maturers tend to have slightly broader shoulders than those who mature early. The legs of early-maturing boys and girls tend to be stocky; those of late maturers tend to be more slender. Early-maturing girls weigh more, are taller, and have greater weight for their height than do late-maturing girls (3). Figure 8-1 shows the effect of age of maturing of girls on body proportions when their growth is completed.

Effects of Physical Changes

As physical changes slow down, the awkwardness of puberty and early adolescence generally disappear. This is because older adolescents have had time to gain control of their enlarged bodies. They are

109). Similarly, if members of the peer group experiment with alcohol, drugs, or tobacco, adolescents are likely to do the same, regardless of how they feel about these matters.

Horrocks and Benimoff (67) have explained peer-group influence in adolescence in this way:

> *The peer group is the adolescent's real world, providing him a stage upon which to try out himself and others. It is in the peer group that he continues to formulate and revise his concept of self; it is here that he is evaluated by others who are presumably his equals and who are unable to impose upon him the adult world sanctions from which he is typically struggling to free himself. The peer group offers the adolescent a world in which he may socialize in a climate where the values that count are those that are set, not by adults, but by others of his own age. Thus, it is in the society of his peers that the adolescent finds support for his efforts at emancipation and it is there that he can find a world that enables him to assume leadership if his worth as a person is such that he can assert leadership. In addition, of course, the peer group is the major recreational outlet of the teenager. For all these reasons it would seem of vital importance to the adolescent that his peer group contain a certain number of friends who can accept him and upon whom he can depend.*

As adolescence progresses, peer-group influence begins to wane. There are two reasons for this. First, most adolescents want to become individuals in their own right and to be recognized as such. The search for identity, discussed earlier in this chapter, weakens the influence of the peer group on the adolescent. The second reason for waning of peer-group influence is the result of the adolescent's choice of peers as companions. No longer are adolescents interested in large group activities, as was true during their childhood days. In adolescence there is a tendency to narrow down friendships to smaller numbers though most adolescents want to belong to larger social groups for social activities. Because these social activities are less meaningful to adolescents than close, personal friendships, the influence of the larger social group becomes less pronounced than the influence of friends.

Changes in Social Behavior

Of all the changes that take place in social attitudes and behavior, the most pronounced is in the area of heterosexual relationships. In a short period of time, adolescents make the radical shift from disliking members of the opposite sex to preferring their companionship to that of members of their own sex. Social activities, whether with members of the same sex or with the opposite sex, usually reach their peak during the high-school years.

As a result of broader opportunities for social participation, *social insight* improves among older adolescents. They are now able to judge members of the opposite sex as well as members of their own sex better than they could when they were younger. As a result, they make better adjustments in social situations and they quarrel less.

The greater the social participation of adolescents, the greater their *social competency,* as seen in their ability to dance, to carry on conversations, to play sports and games that are popular with agemates, and to behave correctly in different social situations. As a result, they gain self-confidence which is expressed in poise and ease in social situations.

Whether *prejudice* and *discrimination* will increase or decrease during adolescence will be greatly influenced by the environment in which adolescents find themselves and by the attitudes and behavior of their friends and associates. Because adolescents, as a group, tend to be more "choosey" in the selection of associates and friends than they were as children, they find adolescents of different racial, religious, or socioeconomic backgrounds less congenial than those with similar backgrounds. However, they are more likely to ignore those they find uncongenial than to treat them in a way that expresses their feelings of superiority, as older children do (120).

New Social Groupings

The gangs of childhood gradually break up at puberty and during early adolescence as the individual's interests shift from the strenuous play activities of childhood to the less strenuous and more formal social activities of adolescence. In their place come new social groupings. The social groupings of boys, as a rule, are larger and more loosely knit while those of girls are smaller and more sharply defined. The most common social groupings during adolescence are described in Box 8-2.

There are changes in some of these social groupings as adolescence progresses. Interest in *organized groups,* whose activities are planned and to a

result, feel that they are missing out on the fun their age-mates are having in extracurricular activities (11). Third, early maturers who feel conspicuously large among their classmates and who, because they look older than they actually are, are often expected to do better academic work than they are capable of (33).

Adolescents who have little interest in education usually show their lack of interest in the following ways. They become *underachievers,* working below their capacities in all school subjects or in the subjects they lack interest in. Others who are disinterested in education become truants and try to gain parental permission to withdraw from school before the legal age for leaving. Still others become dropouts as soon as they reach the legal age of school leaving, regardless of whether they have finished the present grade. This is especially true of early maturers who find school not only uninteresting but often a humiliating experience.

Vocational Interests

Boys and girls of high school age begin to think seriously about their futures. Boys are usually more seriously concerned about an occupation than girls, many of whom regard a job as just a stopgap until marriage (70).

Boys, typically, want glamorous and exciting jobs, regardless of the ability required or the chances that such jobs will be available for them. They also want jobs with high prestige, even if they pay less than those with lower prestige. Many boys from low-status families hope to achieve higher social status through their occupations. Girls, as a rule, show a preference for occupations with greater security and less demand on their time. In their vocational choices, they usually stress service to others, such as teaching or nursing (124).

By late adolescence, interest in a life career has often become a source of great concern. At this time, as Thomas has explained, adolescents learn to distinguish between vocational choice, vocational preference, and vocational aspirations (158). Older adolescents are concerned about what they would like to do and what they are capable of doing. The more they hear and talk about different lines of work, the less sure they are of what they would like to do. They are also concerned about how they can get the kind of jobs they want.

Furthermore, older adolescents have a growing realization of how much it costs to live and they also know what young people, just out of school, can expect to earn. As a result of this greater realism, they approach the choice of their careers with a more practical and more realistic attitude than they had when they were younger.

During childhood and early adolescence, many boys and girls judge different lines of work, such as law and medicine, in terms of the stereotypes presented in the mass media. As near-adults, they begin to judge them in terms of their abilities and of the time and money required for training for these lines of work. While prestige is still an important factor in vocational selection, the older adolescent is more concerned about the autonomy, authority, and security the occupation will give (115).

Because their attitudes toward vocations have gradually become more realistic, most adolescents change their minds often about their future occupations. They are in an "exploratory stage" and may take after-school or summer jobs in fields they think might interest them as a lifetime career. This experience gives them more information on which to base their final decisions.

Religious Interests

Contrary to popular opinion, adolescents of today are interested in religion and feel that it plays an important role in their lives. They talk about religion, take courses in it in school and in college, visit churches of different denominations, and join various religious cults.

Many boys and girls begin to question the religious concepts and beliefs of their childhood and this has led adolescence to be called the *period of religious doubt.* However, Wagner maintains that what is often interpreted as "religious doubt" is, in reality, *religious questioning.* According to him (170):

> *Many adolescents investigate their religion as a source of emotional and intellectual stimulation. Youngsters want to learn their religion on an intellectual basis rather than by blind acceptance. They question religion not because they want to become agnostic or atheistic, but because they want to accept religion in a way that is meaningful to them*—based on their desire to be independent and free to make their own decisions.

On the other hand, adolescents now attend church, Sunday school, and church social events far less than adolescents of previous generations. This

Because the women's liberation movement has concentrated on achieving equality for women in the business and professional fields and in marriage, it has had little impact, to date, on younger adolescents' attitudes toward sex roles. However, the influence of this movement is beginning to be felt among older adolescents who go to college or begin training for business or a career, or who marry or go to work at the completion of high school. Older adolescent girls no longer meekly accept or pretend to accept the traditional female sex role. Instead, they expect, demand, and achieve a more egalitarian role, whether in school, at work, or in their own homes.

Effects of Sex-Role Typing on Adolescents

Sex-role typing affects the behavior and attitudes of both male and female adolescents but in different ways. Of the many effects, four are so common that they are almost universal in the American culture of today. They are as follows.

Feelings of Masculine Superiority While adolescent boys do not tease and bully girls as they did during the gang-age days of late childhood, they still retain a feeling of superiority. Even though they become interested in girls and spend increasingly more time dating them as adolescence progresses, the feeling of their superiority over girls persists.

The usual ways in which masculine superiority is expressed in adolescence is by expecting to play leadership roles in any social, school, or community activity in which both boys and girls participate. While girls play some leadership roles in these activities, boys generally play the important and prestigious roles.

In addition, boys try to show their masculine superiority by achievements superior to those of girls, whether in academic work, in games and sports, or in greater autonomy in their lives. They insist upon more freedom in all areas of their lives than do girls and, to them, this is a subtle insignia of their superiority.

Sex Bias Closely related to feelings of masculine superiority which develop in connection with sex-role typing is sex bias, or the tendency to devalue female achievements regardless of whether they equal or are superior to male achievements (117). As Etaugh and Rose have explained, "Sex bias is well established in boys and girls by the early years of adolescence" (44).

Unlike boys in the gang age of late childhood who devalue female achievements mainly by criticizing or ridiculing them, or by boasting of the superiority of their own achievements, adolescent boys are more subtle in their techniques. Because of their interest in dating and desire to establish close, personal relationships with girls, they try to let girls believe that their achievements are inferior mainly by talking in a semiboastful way about their own achievements. Ignoring girls' achievements is thus a subtle way of informing them that their achievements are inferior to those of boys.

Sex bias is rarely an expresssion of the effects of female sex-role typing. While girls may know or certainly suspect that their achievements are equal to or superior to those of boys, they realize that if they verbalize or otherwise express this knowledge it will jeopardize their chances for social acceptance. Consequently, they pretend that their achievements are inferior to those of boys, often to the point where they actually believe it.

Underachievement By adolescence, the pattern of behavior characterized by underachievement in activities in which both boys and girls are involved has become well developed from the foundations laid during the childhood years (37). As Campbell has said, "Girl decliners appear to be accepting the feminine stereotype including that it isn't feminine to be smart" (22).

Awareness of the values boys have for dating partners and for future mates motivates some girls to underachieve in any activities in which both boys and girls are involved. This they do to conform to the traditional stereotype of masculine superiority. In activities in which only girls are involved, as in sex-separated schools, there is no reason for underachievement and, as a result, girls work up to their capacities unless they have some other reason to become underachievers (153).

Among boys, there are as many or even more underachievers than among girls. However, their reasons for underachievement are unrelated to a desire to avoid surpassing girls. According to the traditional stereotype, males are achievers and superior to females in any activity in which members of the two sexes are involved. Male underachievers in areas in which boys and girls both are involved are often a product of boredom or rebellion against parental

You have either reached a page that is unavailable for viewing or reached your viewing limit for this book.

BOX 9-2

AIDS TO MASTERY OF DEVELOPMENTAL TASKS

Physical Efficiency

The peak of physical efficiency is generally reached in the mid-twenties, after which there is a slow and gradual decline into the early forties. Thus during the period when adjustment problems are the most numerous and difficult, the individual is physically able to meet and solve them.

Motor Abilities

Young adults reach the peak of their strength between the ages of twenty and thirty. Maximum speed of response comes between twenty and twenty-five years, after which decline begins at a slow rate. In learning new motor skills, adults in their early twenties are superior to those who are approaching middle age. Furthermore, young adults can count on their ability to perform in a given situation, which they could not do in adolescence when rapid and uneven growth often caused them to be awkward and clumsy.

Mental Abilities

The most important mental abilities needed for learning and for adjusting to new situations, such as recall of previously learned material, reasoning by analogy, and creative thinking, reach their peak during the twenties and then begin a slow and gradual decline. Even though young adults may not learn quite as rapidly as they did earlier, the quality of their learning does not deteriorate.

Motivation

When adolescents reach the age of legal maturity, they have a strong desire to be regarded by the social group as independent adults. This provides them with the motivation to master the developmental tasks needed to be so regarded.

Role Model

Adolescents who go to work when they finish high school or training school have role models to imitate. Being associated with adults gives them the motivation to model their behavior along adult lines so that they themselves will be judged as adults. By contrast, adolescents who remain in school or college after they reach legal maturity are thrown mostly with their age-mates and, as a result, they pattern their behavior along the lines of adolescent rather than adult behavior. So long as the dependency state persists, they have little opportunity or motivation to master the developmental tasks of adulthood.

DEVELOPMENTAL TASKS OF EARLY ADULTHOOD

Social expectations for young adults are clearly defined and familiar to them even before they reach legal maturity. Perhaps at no other age in life do they know as clearly and distinctly what society expects of them.

The developmental tasks of early adulthood (refer to page 10 for a list of these tasks) center around social expectations and include getting started in an occupation, selecting a mate, learning to live with a marriage partner, starting a family, rearing children, managing a home, taking on civic responsibilities, and finding a congenial social group (46).

How well these tasks are mastered in the early years of adulthood will influence the degree of success people will experience when they reach the peak during middle age—whether the peak relates to work, social recognition, or family living—and will determine how happy they will be then as well as during the closing years of their lives.

Success in mastering the developmental tasks of early adulthood is greatly influenced by the kind of foundations laid earlier. However, certain conditions in adult life facilitate the mastery of these tasks, the most important of which are given in Box 9-2.

CHANGES IN INTERESTS IN EARLY ADULTHOOD

Typically, adolescents carry over into the adult years many of their interests. Interests change during the adult years, however. Some of these carry-over interests are no longer appropriate to the adult role while

the pattern of life today. Regular attendance at church is now part of the parents' life, and they begin to take an active part in some of the church organizations. This does not, however, necessarily mean that they have experienced another period of religious awakening, as often happens in early adolescence.

Many factors determine the strength and form of expression of religious interest among young adults, the most common of which are given in Box 9-5.

Recreational Interests

The term *recreation* means an activity that renews strength and refreshes spirits after toil or anxiety. Like play in childhood, it is activity engaged in for enjoyment, with no ulterior purpose to be achieved. It serves the same purpose as play does in the childhood years. However, the recreational interests of adults are different, in most respects, from the play interests in childhood or even in adolescence.

Young adults in the American culture of today have more leisure time than their parents or grandparents did and more than adults in most other cultures. This is due partly to the shorter workweek and partly to mechanization, which has made running a home less time- and energy-consuming than it formerly was. Furthermore, members of all social classes have more money to spend on recreation today than in the past.

In spite of these opportunities, many young adults do not find their recreational activities satisfactory. One of their major adjustment problems involves learning how to use their free time in an enjoyable way.

There are several major reasons why recreation presents a major adjustment problem. First, while they were in school or college, various forms of recreation were readily available to them, at no cost or at only a minimum cost, and they had many friends with whom to engage in these activities. Second, parents and teachers encouraged them to participate in the readily available forms of recreation as an important part of school and college life. And third, schools and colleges provided them with guidance and supervision in recreation so that they learned how to use their leisure time in a way that gave them satisfaction (60,90,123).

Many factors influence the pattern of adult forms of recreation. Some of the most important of these are given in Box 9-6.

An analysis of the different kinds of recreational interests of American men and women today will show that they are in large part home- or neighborhood-centered and that they differ markedly from the recreational interests of adolescents. Many of these changes in interest are the result of necessity. For example, while the children are still young, many of the family's recreational activities are centered around them. Even when the children reach adolescence, the parents' recreation is largely family-centered.

Talking Talking, especially with those whose interests are similar, is a popular pastime of both young men and young women. It is especially popular among married women whose parental responsibilities keep them in the home for the major part of the day. Much of this talking must be done over the telephone because of the restrictions that children place on the mother's activities. Men, by contrast, do much of their talking to friends outside the home—at work or at meeting places such as bars or recreation centers.

Most young adults talk mainly about personal, day-to-day concerns relating to their families, their work, and social matters. Gossiping about friends and neighbors is common among women, while men are more apt to tell jokes or discuss politics. In discussions with members of the opposite sex, women try to talk about matters of interest to men, while few men try to adapt their conversations to women's interests.

Dancing Dancing, which is one of the most popular forms of recreation in adolescence, is engaged in only infrequently during early adulthood. When home *and* business responsibilities are assumed, young adults have fewer opportunities to dance than they did during their high school and college days. Many adults of all socioeconomic groups dance only infrequently during their early twenties and even less during their thirties. Thus the quality of their dancing deteriorates, and they derive less satisfaction from it than they did during adolescence.

Sports and Games Active participation in sports and athletic events of all sorts decreases during the adult years, not because adults are in poorer health or are less interested in sports, but because they have less time and money to invest in these activities than they did when they were in school or college. Participation reaches a low point as the adult approaches mid-

You have either reached a page that is unavailable for viewing or reached your viewing limit for this book.

BOX 9-9

IMPORTANT QUALITIES OF ADULT LEADERS

- A high socioeconomic status
- A higher level of education than the majority of the group
- A realistic self-concept
- Realistic goals
- A high frustration tolerance
- The ability to express hostility tactfully
- The ability to accept success or failure gracefully
- The ability and willingness to accept authority
- The ability and willingness to communicate with others
- A willingness to work for the group rather than for self

BOX 9-10

CONDITIONS FACILITATING UPWARD SOCIAL MOBILITY

- A high level of education, which lays the foundation for success in business or a profession and brings the individual into contact with higher-status people
- Marriage to a higher-status person
- Family "pull" in the vocational world
- Acceptance and adoption of the customs, values, and symbols of a higher-status group
- Money, either inherited or earned, with which to buy a better home in a better neighborhood and other material possessions that proclaim high status
- Transfer of membership to a higher-status church
- Active participation in prestigious community affairs
- Graduation from a prestigious school or college
- Membership in one or more exclusive community clubs

SOCIAL MOBILITY IN EARLY ADULTHOOD

There are two types of mobility that play important roles in the lives of young adults, geographic and social. *Geographic* mobility means going from one place to another. This is done more often for vocational than for social reasons. How it affects young adults will be explained in the following chapter in the discussion of vocational adjustments.

Social mobility means moving from one social group to another. This may be horizontal—moving to another social group on the same level—or vertical—moving to a social group above or below the group at the present level. Most young adults want to be upwardly mobile; few are satisfied to move from one social group to another on the same level; and even fewer are content to move down on the social scale. Geographic mobility almost always accompanies social mobility.

Part of the American dream of today is to have a better education, a better social and economic status, and more material possessions than one's predecessors. Stated simply, people want to move up the social ladder. This they want not only for themselves but also for their children.

The desire to move up the social ladder is especially strong among young adults who discovered, during adolescence, that those who were most popular and who held most of the leadership roles came from the higher socioeconomic groups. They believe that if they, too, can climb up the social ladder the chances of greater popularity and more leadership roles for themselves and for all members of their families will be increased.

Because men and women usually achieve their highest social and economic status in middle adulthood, from thirty years of age on, young adults are motivated to do all they can to rise above their present status as rapidly as possible. The most important conditions leading to upward social mobility in early adulthood are given in Box 9-10.

In general, men rise on the social ladder mainly by their own efforts while women rise mainly through their marriages to upper-status men or those who are able to advance through their own efforts and achievements (23,104). Physical attractiveness is a greater asset in social mobility for women than education while the reverse is true for men (109). Firstborns, especially boys, are most likely to be given opportunities to rise above the status of their families. As

BOX 9-12

STUMBLING BLOCKS TO MASTERY OF DEVELOPMENTAL TASKS OF EARLY ADULTHOOD

Inadequate Foundations

The more unfinished business, in the form of unmastered earlier developmental tasks, the individual carries into adulthood, the longer and harder the adjustment to adulthood will be.

Physical Handicaps

Poor health or physical defects that prevent the individual from doing what others of similar age can do make mastery of the developmental tasks of adulthood difficult or impossible.

Discontinuities in Training

When training received at home or in school has little or no relationship to the pattern of life in adulthood, the individual will be ill prepared to meet the demands of adult life.

Overprotectiveness

The adult who was overprotected during childhood and adolescence may find adjustment to adult life extremely difficult. Many parents continue to overprotect their adult sons and daughters, thus adding to their adjustment difficulties.

Prolongation of Peer-Group Influence

The longer young adults continue their education in college or training schools, the longer peer-group influences will prevail and the longer their behavior will conform to peer-group standards and values. Because they have become accustomed to behaving as adolescents, learning to behave as adults is more difficult than it otherwise would be.

Unrealistic Aspirations

Adults who were extremely successful academically, socially, and athletically in high school or college are likely to develop unrealistic concepts of their abilities. As a result, they expect to be equally successful in the adult world. Parental aspirations during adolescence often add to the adjustment problems of adulthood.

Religious Hazards

There are two hazards in the area of religion that cause emotional disturbances for many young adults. The first relates to adjusting to a new religious faith accepted in place of the family faith of childhood. Some young adults accept a new faith because it seems to have more in common with their personal interests and beliefs than their family religion had. Others accept a new faith when they marry to please their spouses or their spouses' families. Whatever the reason for accepting a new faith, there is likely to be a conflict with the childhood faith and a problem of adjusting to the ritual associated with the new faith.

The second and more difficult problem related to religion in early adulthood occurs in mixed marriages when in-laws pressure the couple to adopt one or the other faith. Even when young adults have little interest in religion, they object to having the religious training of their children dictated by grandparents on either side, and they resent the implications that their religions are inferior to those of their mates—an implication inherent in the insistence that the change be made.

Furthermore, when faced with this problem, young adults have to contend with the pressures from their own parents, to whom adherence to the family faith may also be important. Adjustment problems in religion frequently complicate marital adjustments and are often at the basis of "in-law" problems—one of the most difficult problems in the area of marital adjustments.

Social Hazards

Many young adults find hazards in their adjustments to the social groups with which they are now identified. Three of these hazards are especially common and difficult to overcome successfully.

First, young adults find it difficult to become associated with a congenial social group—one of the important developmental tasks of early adulthood. There are several conditions responsible for this difficulty. Women who are tied down by home responsibilities may have neither the time nor the money for the social activities they formerly enjoyed and may be unable to find satisfactory substitutes. This results in discontentment which often affects their marital satisfaction. Men likewise, because of pressure from work and home responsibilities, often find it difficult to become associated with a congenial social group. Like

religious participation. *Journal of Psychology*, 1975, **89**, 179–182.

49. Hjelle, L. A., and R. Butterfield. Self-actualization and women's attitudes toward their roles in contemporary society. *Journal of Psychology*, 1974, **87**, 225–230.

50. Hoffman, L. W. Fear of success in 1965 and 1974. A follow-up study. *Journal of Consulting & Clinical Psychology*, 1977, **45**, 310–321.

51. Hoge, D. R. Changes in college students' value patterns in the 1950s, 1960s, and 1970s. *Sociology of Education*, 1976, **49**, 155–163.

52. Ivancevich, J. M., and J. H. Donnelly. Leader influence and performance. *Personnel Psychology*, 1970, **23**, 539–549.

53. Jackson, D. J., and T. L. Huston. Physical attractiveness and assertiveness. *Journal of Social Psychology*, 1975, **96**, 79–84.

54. Jackson, E. F., W. S. Fox, and C. J. Crockett. Religion and occupational achievement. *American Sociological Review*, 1970, **35**, 48–63.

55. Joesting, J. The influence of sex roles on creativity in women. *Gifted Child Quarterly*, 1975, **19**, 336–339.

56. Jones, M. C. Personality antecedents and correlates of drinking patterns of women. *Journal of Consulting & Clinical Psychology*, 1971, **36**, 61–69.

57. Jones, S. B. Geographic mobility as seen by the wife and mother. *Journal of Marriage & the Family*, 1973, **35**, 210–218.

58. Kampler, H. L. Extended kinship ties and some modern alternatives. *Family Coordinator*, 1976, **25**, 143–149.

59. Keller, S. The future role of women. *Annals of the American Academy of Political & Social Sciences*, 1973, **408**, 11–12.

60. Kelly, J. R. Life styles and leisure choices. *Family Coordinator*, 1975, **24**, 185–190.

61. King, K., T. J. Abernathy, I. E. Robinson, and J. O. Balswick. Religiosity and sexual attitudes and behavior among college students. *Adolescence*, 1976, **11**, 535–539.

62. Klobus, P., J. N. Edwards, and D. L. Klemmack. Differences in social participation: Blacks and whites. *Social Forces*, 1978, **56**, 1035–1052.

63. Knapp, C. W., and B. T. Harwood. Factors in the determination of intimate same-sex friendships. *Journal of Genetic Psychology*, 1977, **131**, 83–90.

64. Knoke, D., and R. Thomson. Voluntary association membership trends and the family life cycle. *Social Forces*, 1977, **56**, 48–65.

65. Kobrin, F. E. The primary individual and the family: Changes in living arrangements in the United States since 1940. *Journal of Marriage & the Family*, 1976, **38**, 233–239.

66. Krebs, D., and A. A. Adinolfi. Physical attractiveness, social relations, and personality style. *Journal of Personality & Social Psychology*, 1975, **31**, 245–253.

67. Kreze, A., M. Zelina, J. Iulas, and M. Garbara. Relationship between intelligence and relative prevalence of obesity. *Human Biology*, 1974, **46**, 109–113.

68. Laney, G. T. The new morality and the religious communities. *Annals of the American Academy of Political & Social Sciences*, 1970, **387**, 14–31.

69. Laumann, E. D., and J. S. House. Living room styles and social attitudes: The patterning of material artifacts in a modern urban community. *Sociology & Social Research*, 1970, **54**, 321–342.

70. Lavrakas, P. J. Female preferences for male physiques. *Journal of Research in Personality*, 1975, **9**, 324–334.

71. Levine, A., and J. Crumrine. Women and fear of success: A problem in replication. *American Journal of Sociology*, 1975, **80**, 964–974.

72. Levinson, D. J. Growing up with the dream. *Psychology Today*, 1978, **11**(8), 20–31, 89.

73. Lipman-Blumen, J. How ideology shapes women's lives. *Scientific American*, 1972, **226**(1), 34–42.

74. Marini, M. M. The transition to adulthood: Sex differences in educational attainment and age at marriage. *American Sociological Review*, 1978, **43**, 483–507.

75. Mason, K. O., and J. L. Czajka. Change in U.S. women's sex-role attitudes, 1964–1974. *American Sociological Review*, 1976, **41**, 573–596.

76. Mathes, E. W., and A. Kahn. Physical attractiveness, happiness, neurotocism, and self-esteem. *Journal of Psychology*, 1975, **90**, 27–29.

77. McAllister, R. J., E. W. Butler, and E. J. Kaiser. The adaptation of women to residential mobility. *Journal of Marriage & the Family*, 1973, **35**, 197–204.

78. McGahan, P. The neighbor role and neighboring in a highly urban area. *Sociological Quarterly*, 1972, **13**, 397–408.

79. Midgley, N., and M. Abrams. Fear of success and locus of control in young women. *Journal of Consulting & Clinical Psychology*, 1974, **42**, 737.

80. Mims, P. R., J. J. Hartnett, and W. R. Nay. Interpersonal attraction and help volunteering as a function of physical attractiveness. *Journal of Psychology*, 1975, **89**, 125–131.

81. Minuchin, P. The schooling of tomorrow's women. *School Review*, 1972, **80**, 199–208.

82. Mischel, H. N. Sex bias in the evaluation of professional achievement. *Journal of Educational Psychology*, 1974, **66**, 157–166.

83. Money, J., and A. A. Ehrhardt. *Man and woman, boy and girl*. Baltimore, Md.: Johns Hopkins Press, 1973.

84. Montagu, A. Don't be adultish! *Psychology Today*, 1977, **11**(3), 46–50, 55.

85. Neugarten, B. L. Education and the life cycle. *School Review*, 1972, **80**, 209–216.

86. Neugarten, B. L. Continuities and discontinuities of psychological issues into adult life. In D. C. Charles and W. R. Looft (Eds.). *Readings in psychological development through life*. New York: Holt, 1973, Pp. 348–355.

87. Nevill, D., and S. Damico. Role conflict in women as a function of marital status. *Human Relations*, 1975, **28**, 487–498.

88. New York Times article. Lazy husbands said to fatigue wives. *The New York Times*, April 3, 1966.

89. New York Times article. If you feel worthless doing family chores. *The New York Times*, March 29, 1973.

90. Orthner, D. K. Leisure activity patterns and marital satisfaction over the marital career. *Journal of Marriage & the Family*, 1975, **37**, 91–102.

91. Packard, V. *The status seekers*. New York: Pocket Books, 1961.

92. Paige, K. E. Women learn to sing the menstrual blues. *Psychology Today*, 1973, **7**(4), 41–46.

93. Pankratz, L., P. Levendusky, and V. Glaudin. The antecedents of anger in a sample of college students. *Journal of Psychology*, 1976, **92**, 173–178.

94. Peacocke, A. R. The Christian faith in a scientific era. *Religious Education*, 1963, **58**, 372–376.

95. Pleck, J. H. The male sex role: Definitions, problems, and sources of change. *Journal of Social Issues*, 1976, **32**(3), 155–168.

ment adults must make, the ones described below are the most common and most important.

Selection of a Vocation

The first major adjustment is the selection of a vocation. While some adults have made this selection years earlier and have been trained for the work the vocation demands, many young adults, when they graduate from high school, college, or even a professional training school are not sure of what they want to do for the rest of their lives. Even worse, they often find that what they thought they wanted to do is not available or that they lack the training necessary to carry out the work required by the vocation they selected.

Today, there is evidence that selection of a vocation becomes increasingly difficult for each successive generation of young adults. This contributes heavily to the difficulty they have adjusting to their vocations. Box 10-1 gives the most common factors which make vocational choice difficult.

Many young adults who have had little or no training for a particular line of work go through a period of trying out one job after another, often in different lines of work. This "job-hopping" as it is called often goes on during the twenties or even into the thirties. When the selection of a vocation will be made depends on certain factors, the most important of which are the individual's liking for the kind of work selected, evidence of ability to do the work successfully, and necessity, due to financial or other responsibilities. Young men who must support a family, for example, often make a vocational selection earlier than those who have no such financial obligations.

Many young adults claim that they do not want to go into the same line of work as their parents or other relatives. But even though their first vocational choices may have little relation to the occupations of their fathers or mothers, there is evidence that the final choice of a job is more often in that general occupational group than in a different. The exception to this general trend is when young adults have had education and training above that of their parents and thus vocational upward mobility is possible (82,102).

Stability of Vocational Selection

The second major adjustment the young adult must make is the stabilization of the vocational selection. It is not at all uncommon for both men and women to change jobs—job-hopping—during their twenties and sometimes even into their thirties. However, by the late thirties, as Gould has pointed out, "it is too late to make major changes in a career" (68). This is especially true of a career that requires special training unless the individual is in a position to take time out for this training.

BOX 10-1

FACTORS MAKING VOCATIONAL CHOICE DIFFICULT

- The ever-increasing number of different kinds of work from which to choose
- Rapid changes in work skills due to increased use of automation
- Lack of flexibility in working time which is especially difficult for women who must adjust their work schedule to their home responsibilities
- Long and costly preparation which makes career shifts impossible
- Sexual stereotypes of certain occupations—teaching and nursing as "women's work" and aviation and engineering as "men's work"
- Unfavorable stereotypes of some occupations, especially the service occupations
- A desire for a job that will give a sense of identity rather than one that makes the individual feel like a cog in a big machine
- Lack of security in work, especially seasonal jobs, which influences women's vocational selections more than men's
- Ignorance of one's own capacities due to lack of job experience or vocational guidance
- Insufficient education or training for available jobs
- Unrealistic vocational aims carried over from adolescence or even childhood
- Unrealistic values and expectations, especially concerning job prestige and autonomy

How stable the individual's vocational selection will be will depend largely on three factors. These are job experience, personal interests, and vocational values. Of lesser importance is economic necessity which, today, plays a less dominant role than in the past. This is partly because unemployment insurance enables the worker to live for a period of time

BOX 10-4

TYPICAL FAMILY PATTERNS IN THE AMERICAN CULTURE OF TODAY

Nuclear Families

Because of small living quarters, most American families are nuclear, consisting of parents and children.

Elongated Families

Except in rural and small-town areas, elongated families, consisting of the nuclear family plus relatives who live under the same roof, are relatively uncommon today.

Single-Child Families

Single-child families are more common among adults who marry late than among those who marry early, and among those where the wife is dedicated to her career.

Different-sized Families

In urban and suburban areas, small families, with three or fewer children, are more common than large families with six or more children, or medium-sized families, with three to six children.

Childless Families

Career-oriented and highly educated men and women often decide to have no children so they can advance in their careers and enjoy the good life made possible by their joint earnings.

Young-Parent Families

Adults who assume the parental role in their late teens or early twenties and have their last child before they are thirty are more common among the less-educated adults than among those who attend college and professional training schools.

Overage-Parent Families

Adults who marry late or who voluntarily delay parenthood until the thirties are regarded as "overage" parents.

Families with Working Mothers

Families where mothers work outside the home and turn the children over to caretakers or put them in child-care centers are increasing in all socioeconomic groups, especially in urban and suburban areas.

Single-Parent Families

In a single-parent family, either the mother or the father assumes the responsibility for the care of the children after death, divorce, or the birth of an illegitimate child. An increasing number of fathers are assuming this role.

Reconstituted Families

Following death or divorce, the family may be reconstituted by a stepparent who replaces the missing parent.

Communal Families

In communal families, several nuclear families band together to share the responsibilites for the care of the home and the children and they often share marital partners.

Foster-Parent Families

In foster-parent homes, the parents have no legal responsibility for the children nor do the children bear their names. Their role is primarily that of paid caretaker for children whose parents cannot or will not keep them or whose parents are dead or mistreat them.

Adoptive Families

In adoptive families, some or all of the children have no blood ties with the parents who have legal responsibility for them and give them the family name. They have all the rights and privileges of natural children.

Interreligious Families

Spouses comes from different religious faiths though one often converts to the faith of the other either before or after marriage.

Interracial Families

In an interracial family, the two spouses come from different racial groups.

educational, cultural and social backgrounds. Both husbands and wives must learn to adjust to their in-laws if they are to avoid frictional relationships with their spouses.

It is not at all uncommon, particularly when the married couple is young and inexperienced, for the in-laws to try to exert some control over their lives, especially if they are partially or totally responsible for their support. When, by contrast, the couple is older, more experienced, and better established financially, in-law interference with their lives is less likely to occur (81,128).

In-law adjustments have been made more difficult by a number of factors which are of recent origin and which members of past generations, for the most part, were not forced to cope with. These are listed in Box 10-8.

In-law trouble is especially serious during the early years of marriage and is one of the most important causes of marital breakup during the first year. It is more serious in families where there are no

In-law trouble is especially serious during the early years of marriage and is one of the most important causes of marital breakup at that time. (Suzanne Szasz. Photo Researchers, Inc.)

BOX 10-8

FACTORS INFLUENCING IN-LAW ADJUSTMENTS

Stereotypes

The widely accepted stereotype of the "typical mother-in-law" can lead to unfavorable mental sets even before marriage. Unfavorable stereotypes about the elderly—that they are bossy and interfering—can add to in-law problems.

Desire for Independence

Young married adults tend to resent advice and guidance from their parents, even if they must accept financial aid, and they especially resent such interference from in-laws.

Family Cohesiveness

Marital adjustments are complicated when one spouse devotes more time to relatives than the other spouse wants to; when a spouse is influenced by family advice; or when a relative comes for an extended visit or lives with the family permanently.

Social Mobility

Young adults who have risen above the status of their families or that of their in-laws may want to keep them in the background. Many parents and relatives resent this and hostile relationships with the young couple as well as marital friction are likely to develop.

Care of Elderly Relatives

Caring for elderly relatives is an especially complicating factor in marital adjustments today because of present unfavorable attitudes toward older people and the belief that young people should be independent of relatives, especially when there are children in the family.

Financial Support of In-Laws

When a young couple must contribute to or assume responsibility for the financial support of in-laws, it can and often does lead to a frictional marital relationship. This is because the spouse whose in-laws must be aided financially resents having to make sacrifices of wants or even needs to make this aid possible.

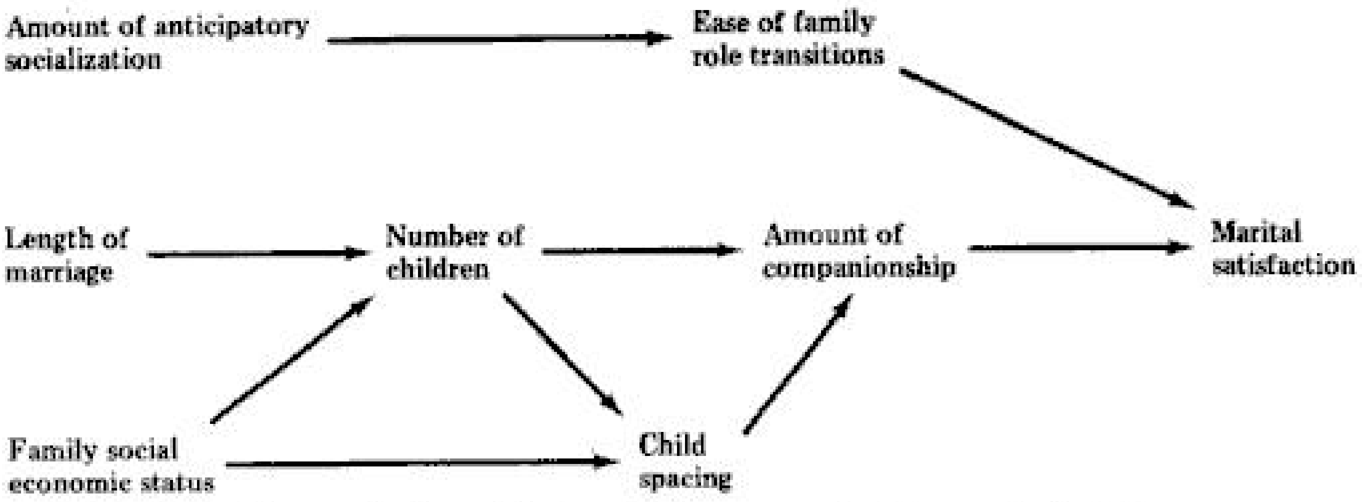

Amount of anticipatory socialization
Ease of family role transitions
Length of marriage
Number of children
Amount of companionship
Marital satisfaction
Family social economic status
Child spacing

FIGURE 10-6 Theoretical model of variables antecedent to marital satisfaction. (Adapted from B. C. Miller. A multivariate developmental model of marital satisfaction. *Journal of Marriage & the Family*, 1976, **38,** 643–657. Used by permission.)

Criteria of Marital Adjustment

The success of marriage is reflected in a number of interpersonal relationships and behavior patterns. While these may vary, to some extent, for different people and for marriages at different ages, they can, for the most part, be used to assess the adjustment of any marriage. The most important of these criteria are given and explained in Box 10-10.

ADJUSTMENT TO SINGLEHOOD

According to the old cliche, in many communities there is no place for the bachelor or for the single woman except as an extra man at a dinner party or as a baby-sitter for married relatives. It is also popularly assumed that men and women who do not marry will be lonely, unhappy, and thwarted in their normal desires for sex, parenthood, affection from an admired member of the opposite sex, and the prestige that marriage and family living provide. Furthermore, because early adulthood is a lonely time during which radical adjustments must be made in every area of life, many adults feel that marriage will help them to make these adjustments.

There is no question about the fact that in a culture in which marriage is the normal pattern for adult life, most adults want to marry and come under strong pressure from parents and peers to do so. During their twenties, the goal of most unmarried women, whether working or not, is marriage. If they have not married by the time they reach their thirtieth birthdays, they tend to shift their goals and values toward a new lifestyle oriented toward work, success, and personal pleasures (1).

Thirty has been called a "critical age" for an unmarried woman. As Campbell has put it, "For women, age thirty is still the Great Divide" (29). The reason for this is that the woman's life is often characterized by stress as she reaches her thirtieth birthday and is still unmarried. This stress usually reaches a peak at thirty and then gradually decreases as she makes adjustments to new goals and a new pattern of living. For many women, a desire for marriage and a family decrease after thirty as they realize they are not likely to achieve their goals. Furthermore, many become disillusioned with the thought of marriage as they see the unhappy and unfavorable experiences of some of their contemporaries (149).

How women feel about being unmarried varies according to the communities in which they live. Those who live in rural, small-town, or suburban areas are far more handicapped by singlehood than are those who live in urban areas. As one young women put it, "I would never live single in the suburbs again. It's deadly boring, and people make you feel as though you should apologize for being single. Here (in the city), I feel alive" (153).

Single men do not, as a rule, experience the stress that single women do. They know that if they want to marry they can do so. Many men remain single throughout their twenties or even thirties because they want to enjoy the freedom of singlehood or because they want to devote their time and energy to becoming established in their careers. Some may

CHAPTER ELEVEN
MIDDLE AGE: PERSONAL AND SOCIAL ADJUSTMENTS

After reading this chapter, you should be able to:

- Understand why middle age is divided into two subdivisions, when they occur, and the characteristics of each.
- Describe the developmental tasks of middle age that should prepare men and women for successful adjustment to old age.
- Appreciate why adjustments to physical changes are among the most difficult middle-aged people must make.
- Recognize some of the common characteristics of the menopause syndrome in women, and the climacteric syndrome in men, and what criteria can be used to assess the success of adjustment to the changes these stages bring.
- Show how middle-aged people can adjust to mental changes and changes in interests.
- Account for some of the conditions responsible for changes in social attitudes and activities in middle age and explain what conditions most often contribute to good social functioning at this time.
- Acknowledge the most common personal and social hazards of middle age and understand why they are regarded as hazards.

As a result of this self-evaluation, Archer has further pointed out, "The mid-years seem to require the development of a different, generally more realistic sense of who one is. . . . In growing up, everyone nurtures fantasies or illusions about what one is, and what one will do. A major task of the mid-life decade involves coming to terms with those fantasies and illusions" (3).

Middle Age Is Evaluated by a Double Standard

The eighth characteristic of middle age is that it is evaluated by a double standard, a standard for men and a standard for women. In spite of the growing trend toward egalitarian roles for men and women in the home, in business, industry, the professions, and in social life, there still exists a double standard regarding aging. While this double standard affects many aspects of the lives of middle-aged men and women, two are especially common.

The first relates to physical changes. When men's hair becomes gray, when they develop lines and wrinkles on their faces and a middle-aged pouch in place of a once-slender waistline, they are usually regarded as "distinguished." Similar physical changes in women are judged as unattractive with major emphasis on the "middle-age spread."

The second area in which the double standard is apparent is in the approved way for members of the two sexes to age. There are two different philosophies about how people should adjust to middle age: one, that they should stay young and active and, two, that they should grow old gracefully, deliberately slowing down and taking life comfortably—this is the "rocking-chair" philosophy. Women, on the whole, are more likely to adopt the rocking-chair philosophy than men, though this holds true more for women of the lower class than for the upper-middle and upper classes (30,80).

Middle Age Is the Time of the Empty Nest

The ninth characteristic of middle age is that it is the time of the empty nest—the time when the children no longer want to live under the parental roof. Except in cases where men and women marry later than the average age, or postpone having their children until they are well established in their careers, or have large families spread out over a decade or more of time, middle age is the "empty nest" stage in marital lives.

For most American families of today, the empty-nest stage begins in the forties, though, with late marriage and parenthood, or with large numbers of children, it may not begin until the mid- or late fifties. Figure 10-3 shows the median age of mothers in America today as compared with earlier decades when their last children leave home. Note that with today's smaller families, the empty-nest period in marital lives comes earlier.

After years of living in a family-centered home, most adults find it difficult to adjust to a pair-centered home. Refer to Figure 10-4. This is because, during the child-rearing years, husbands and wives often grew apart and developed individual interests. As a result, they have little in common after mutual interests in their children wane and when they are thrown together to adjust to each other the best they can.

Unquestionably, the empty-nest period of middle age is far more traumatic for women than for men. This is especially true of women who have devoted their adult years to homemaking and who have few interests or resources to fill their time when their homemaking jobs lessen or come to an end. Many experience a "retirement shock" similar to that experienced by men when they retire.

Middle Age Is a Time of Boredom

The tenth characteristic of middle age is that it is often a time of boredom. Many, if not most, men and women experience boredom during the late thirties and forties. Men become bored with the daily routine of work and with a family life that offers little excitement. Women, who have spent most of their adulthood caring for the home and raising children, wonder what they will do for the next twenty or thirty years (45). The unmarried woman who has devoted her life to a job or career is bored for the same reasons men are. Archer (3) has explained the boredom men experience in this way:

> *By the time you are 40 everyone—including you—knows that you can do whatever you are doing. And at that point some men get bored. Some begin looking for new territory. In most men, however, this impulse is checked by the sense that one has passed the last chance to change directions, to choose new goals.*

You have either reached a page that is unavailable for viewing or reached your viewing limit for this book.

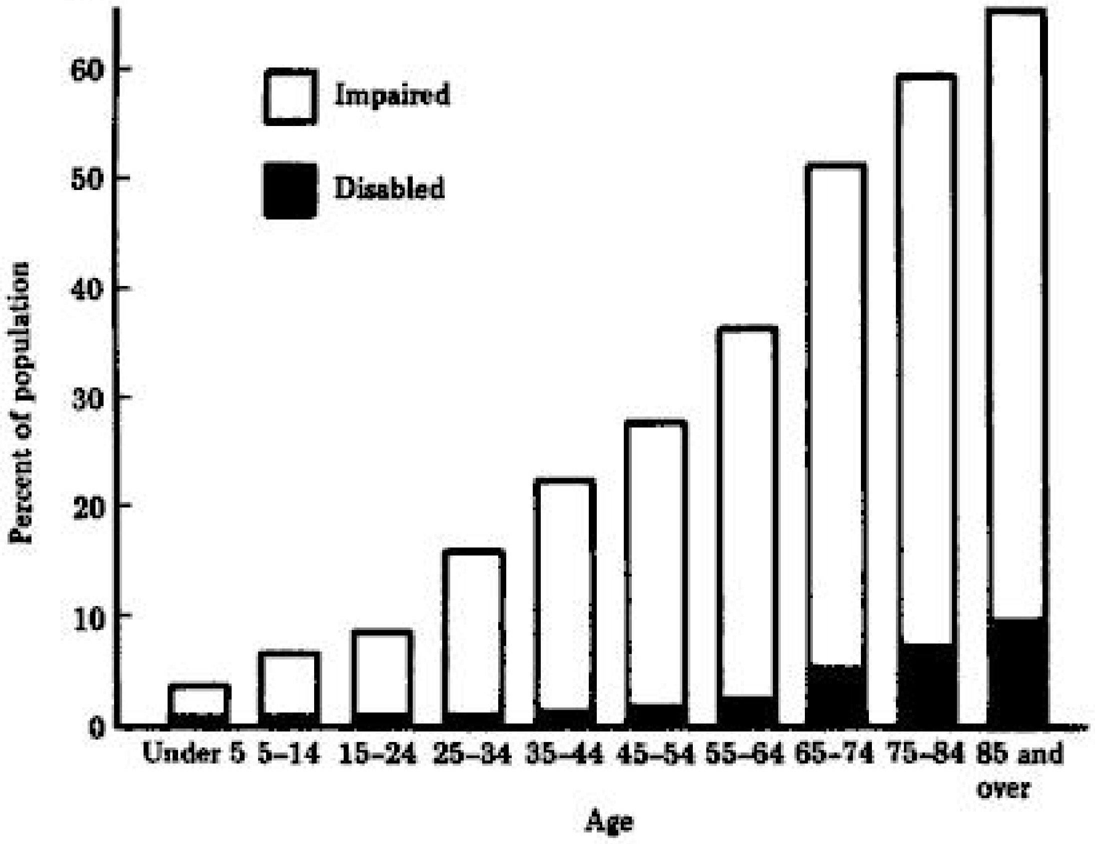


FIGURE 11-4 Disability and invalidism increase with advancing age. (Adapted from N. W. Shock. *Trends in gerontology*. [2nd ed.] Stanford, Calif.: Stanford University Press, 1959. Used by permission.)

depends on many factors, such as heredity, past health history, the emotional stresses of life, and willingness to adjust the pattern of living to changed physical condition. For example, aggressive, ambitious men may be able to avoid health problems during early adulthood, but after forty they are more likely to have heart attacks than men who have a relatively calm outlook and less taxing jobs (73).

Sexual Changes

By far the most difficult physical adjustment men and women must make in middle age is to changes in their sexual capacity. Women go through the *menopause*, or *change of life*, at which time the menstrual periods cease, and they lose their childbearing ability. Men experience the *male climacteric*.

Both the menopause and the male climacteric are surrounded by mystery for most men and women, and there are many traditional beliefs which heighten the dread people feel as they approach the period in life when these physical changes occur. The years during which the woman goes through the menopause, for example, are often referred to as "critical" (17,29).

Far more is known today about the causes and effects of the sexual changes that occur during middle age than in the past. Furthermore, there is growing evidence that these changes are a normal part of the life pattern and also that marked psychological changes during middle age are more the result of emotional stress than of physical disturbances. This is true of men as well as of women (17,53).

Sexual Changes in Women General bodily and emotional changes occur at the time of the menopause but are not necessarily caused by it or related to it. Cessation of menstruation is therefore only one aspect of the menopause.

The average age for cessation of the menstrual flow is around forty-nine years, though this varies widely among women, depending on hereditary endowment, general health conditions, and variations in climate. There is some evidence, though far from conclusive at the present time, that smoking, especially when excessive, brings on an earlier onset of the menopause (14).

Early puberty usually means late menopause, and vice versa. Loss of the childbearing function is not an overnight phenomenon, any more than the development of this function at puberty is. It takes several years for the reproductive apparatus to cease its normal functioning, the rate depending on the rate of

Acceptance of Traditional Beliefs Acceptance of traditional beliefs about middle age has a profound influence on attitudes toward the physical changes that come with advancing age. The menopause, for example, is often referred to as a "critical" period, and this can heighten a women's dread of it. As Parker has said (80):

> *This [term] carries the implication of danger—that woman is on the brink of disaster, that her health, her happiness, and her very life is in jeopardy. It further implies that this is not merely a time of crisis that can be met forthwith and dissolved, but rather years when she must feel her way along a narrow ledge of safety, at any moment of which by one false step she might fall into the abyss of a mental breakdown or serious physical illness.*

Because hair on the head, face, body, arms, and legs is traditionally associated with virility in men, the thinning of the hair in middle age is likely to be a source of great concern to them. Even the beginning of baldness disturbs them because they believe that it is indicative of a decline in their sexual powers. In reality, *anxiety about virility* is one of the chief causes of such decline, and the balding middle-aged man who worries about his sexual powers merely accelerates the rate of their decline.

Idealization of Youth Many middle-aged people, particularly men, are in constant rebellion against the restrictions age places on their usual patterns of behavior. A man may refuse to adhere to a diet his doctor prescribes or to restrict his activities for the sake of his health. Like the pubescent child, the middle-aged man rebels against restrictions on behavior, but for a different reason. Rebellion stems from a recognition of the value that society attaches to youth and thus he is rebelling against restrictions that mean he is growing old. This may bring on middle-aged ailments of minor or major seriousness. As Steincrohn has pointed out (92):

> *If you relax more often, if you slow up, don't believe that you will grow old prematurely. The grim reaper won't swish his scythe at you and cut you off long before you reach the 70s and 80s. On the contrary, the reaper seems to have patience for the relaxers and is impatient with the overdoers.*

Women who make the poorest adjustments to middle age are those who have attached a great deal of importance to a youthful appearance and masculine admiration. When they are forced to recognize that they are no longer as attractive as they once were and that they cannot attract and hold masculine attention, they may openly rebel against middle age.

When adjustment to middle age is poor, as shown by constant rebellion against the physical changes that inevitably come with aging, interest in clothing is intensified. Men and women concentrate mainly on selecting clothes which will make them look younger than they are. Bright colors, extreme styles, and a large wardrobe become as important to the middle-aged man or women who is trying to defy age as they are to the adolescent.

Rebellion against middle age is often heightened by magazine articles, television advertisements, and so on, that stress what the middle-aged person can and should do to camouflage the telltale signs of aging. Ryan, however, has suggested that these changes in appearance are not necessarily unattractive. According to her (86):

> *Some of these changes may make the individual more, rather than less, attractive. Often the first and most obvious change is in the color of the hair which usually turns to gray and then to white. This frequently is a positive factor: many people are more attractive with white hair. Also, as individuals grow older, the face becomes more lined and wrinkled. This, again, is not necessarily a detriment. These lines may give a pleasing character to a face which was bland and uninteresting with the smoothness of youth.*

Role Changes Changing roles is never easy, especially after one has played certain prescribed roles over a period of time and has learned to derive satisfaction from them. Furthermore, too much success in one role is likely to lead to rigidity and may make adjustment to another role difficult.

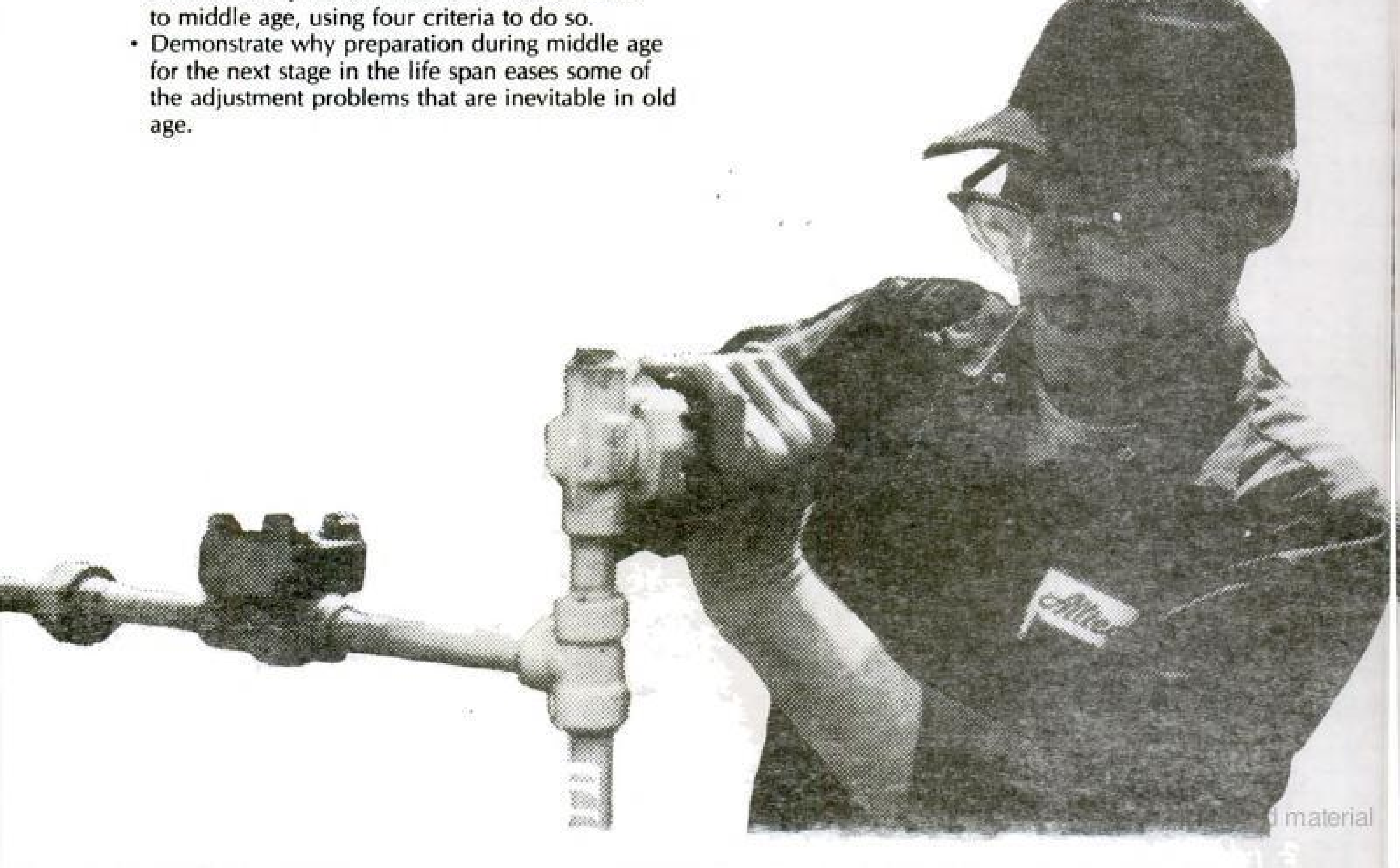
Also, a person who has played a narrow range of roles is likely to be less flexibile than one who has played a wider range and has learned to derive satisfaction from different roles. The person who has played many roles finds it easier to shift to a new one. To make a good adjustment to new roles, the individual must, as Havighurst has explained, "withdraw emotional capital from one role and invest it in another one" (39).

Changing Interests A serious hazard to good personal adjustments in middle age comes from the ne-

CHAPTER TWELVE
MIDDLE AGE: VOCATIONAL AND FAMILY ADJUSTMENTS

After reading this chapter, you should be able to:

- Understand that vocational adjustment problems affect middle-aged women as well as middle-aged men, and recognize some of the changed work conditions that contribute to these problems.
- Describe some of the factors influencing vocational adjustment in middle age and know the criteria used to assess vocational adjustments at this age.
- Explain the impact of the "empty nest" on family patterns in middle age and point out the types of adjustment problems this change gives rise to.
- Describe the problems single men and women face in middle age.
- List and describe the common vocational and marital hazards of middle age.
- Assess the adjustments men and women make to middle age, using four criteria to do so.
- Demonstrate why preparation during middle age for the next stage in the life span eases some of the adjustment problems that are inevitable in old age.



d material

success men and women achieve in their work and the degree of satisfaction they derive from it. Unless both of these conditions are taken into consideration, an assessment of their vocational adjustments will not be accurate.

Achievements Many middle-aged workers enjoy a degree of success that gives them the income, the prestige, the authority, and the autonomy they had hoped for. Others, also trained and experienced, find themselves in less rewarding jobs below their capacities. Still others may be successful in that they have made the most of their abilities and training, but regard themselves as failures because they have not achieved the success they had hoped for when they were younger. This lack of satisfaction with their achievements makes them discontented with their jobs and with themselves as workers.

Women, far more often than men, fail to achieve the vocational success they are capable of during middle age. This is just as true of women who have worked continuously since they finished their education as of women who left their jobs after they were married and then returned to work after their home and parental duties diminished. This failure is due not to lack of ability and training but to prejudice against women in positions of responsibility.

Satisfaction Among industrial workers, the forties are the "critical age" for job satisfaction. This age comes slightly later for workers in business and the professions. By the end of the fifties and early sixties, there is usually a sharp drop in vocational satisfaction (95). This is shown in Figure 12-1.

About five years before the compulsory retirement age, whether it is sixty, sixty-two, sixty-five, or seventy, there is usually a sharp drop in the satisfaction *men* experience in their work. (Refer to Figure 12-1.) The reason for this drop is that men now feel that they have little chance for advancement, no matter how hard they may work or how faithful they may be about keeping absenteeism to a minimum.

Job satisfaction also wanes as middle age progresses because men begin to feel the pressures of work as a result of their general slowing down and increased tendency toward fatigue, both of which are natural accompaniments of aging. In addition, they resent the attitudes of some younger workers who not only can do the work more easily than they but who often seem to be counting the days until the older men retire and they can take their places. None of these factors contributes to job satisfaction.

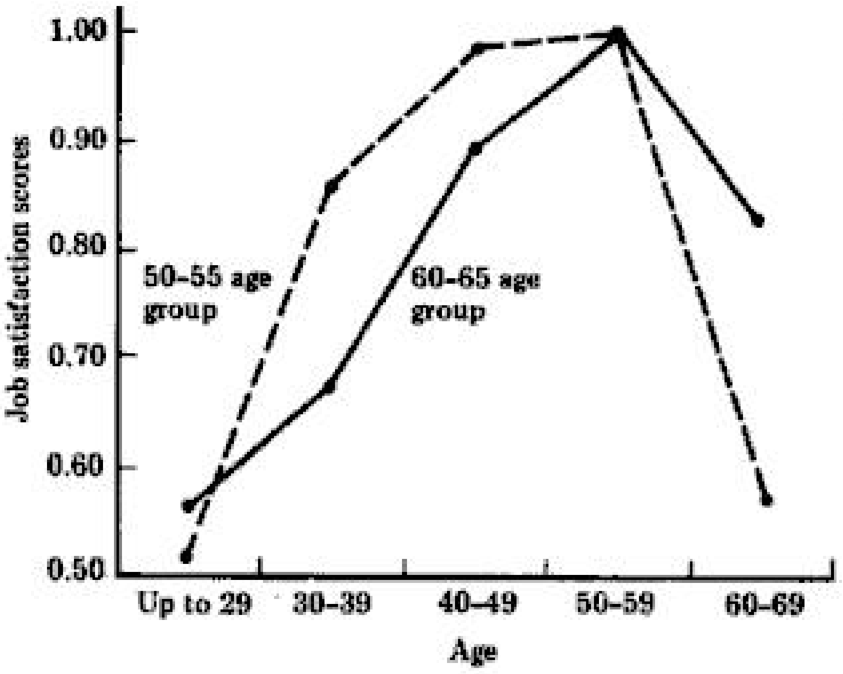


FIGURE 12-1 Job satisfaction reaches its peak in the mid-fifties and then declines abruptly. (Adapted from S. D. Saleh and J. L. Otis. Age and level of job satisfaction. *Personnel Psychology,* 1964, **17,** 425–430. Used by permission.)

Middle-aged *women,* even more than men, fail to derive the satisfaction they should from their work. And, like men, their dissatisfaction increases with each passing year until they welcome the compulsory retirement age. Their dissatisfaction is due to many of the same factors that cause dissatisfaction in men, but it is intensified by their resentment at not being given equal opportunities for advancement when their abilities justify it. Members of *minority groups,* both men and women, also experience job dissatisfaction for this reason.

The most important conditions leading to vocational satisfaction in middle age are given in Box 12-3. When satisfaction is high, workers will do all they possibly can to keep their work up to previous standards, even though they may have to press themselves to do so; they will be loyal to their employers and not take unnecessary time off from work; they will try to bolster the morale of their coworkers; and they will not complain, even when things are not to their liking.

ADJUSTMENT TO CHANGED FAMILY PATTERNS

The pattern of family life undergoes marked changes during the period of middle age. As Cavan has

Turning again toward childish treble, pipes
And whistles in his sound.

One of the few cheerful literary references to old age is provided by Browning:

Grow old along with me!
The best is yet to be,
The last of life, for which the first was made.

Images of the elderly in poetry today likewise tend to be negative. Sohngen and Smith have concluded, from their study of modern poetry, that the emphasis is on physical, social, and emotional losses. As they put it, "Images of age found in the most readily available poems are similar to the negative stereotypes of popular culture (141).

Fiction has been no more favorable to the elderly than poetry. The tendency there, as in poetry, is to depict the elderly in negative terms (10,140). However, there is some evidence that, in recent years, fiction for children has been portraying the aged in a less negative way than in the past (25).

Television has made its contribution to stereotypes of the elderly. Because of the constant emphasis on the beauty and strength of youth, the elderly are made to seem unattractive and ineffectual by comparison. While television does not directly emphasize the negative aspects of age, indirectly it does so by its unfavorable comparisons with the young (116).

Third, jokes and different forms of humor contribute to the unfavorable stereotypes of the elderly. For the most part, the foolishness rather than the wisdom of age is emphasized. This, understandably, leads to negative attitudes that reinforce the already-existing unfavorable stereotypes (49,124,152).

Fourth, stereotypes have been reinforced by scientific studies of the aged. Because the subjects in most of these studies, as was emphasized earlier, have been persons in institutions whose physical and mental decline was primarily responsible for their institutionalization, it is not surprising that the results of these studies support the popular stereotype. And yet studies of representative samplings of noninstitutionalized elderly people have provided little evidence to justify this stereotype.

The common stereotype of the aged is that of men and women who are worn out physically and mentally, who are unproductive, accident-prone, crotchety and hard to live with, and who, because their days of usefulness are over, should be pushed aside to make way for younger people. According to this stereotype, "Young is beautiful and old is ugly," as Berry had explained (12). This unfavorable stereotype, it should be apparent, makes it difficult to see aging as anything but a negative phase in the life span (32).

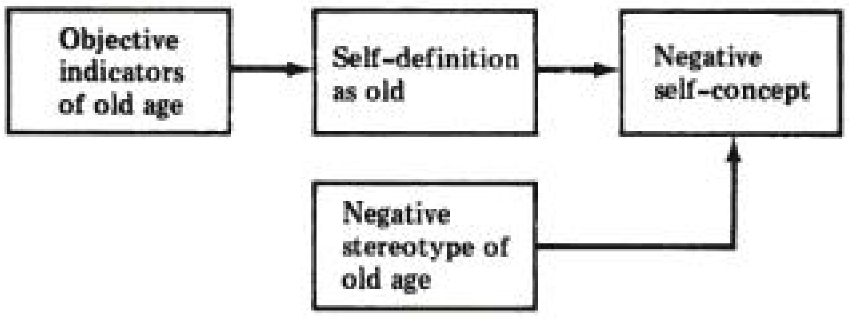

Objective indicators of old age
Self-definition as old
Negative self-concept
Negative stereotype of old age

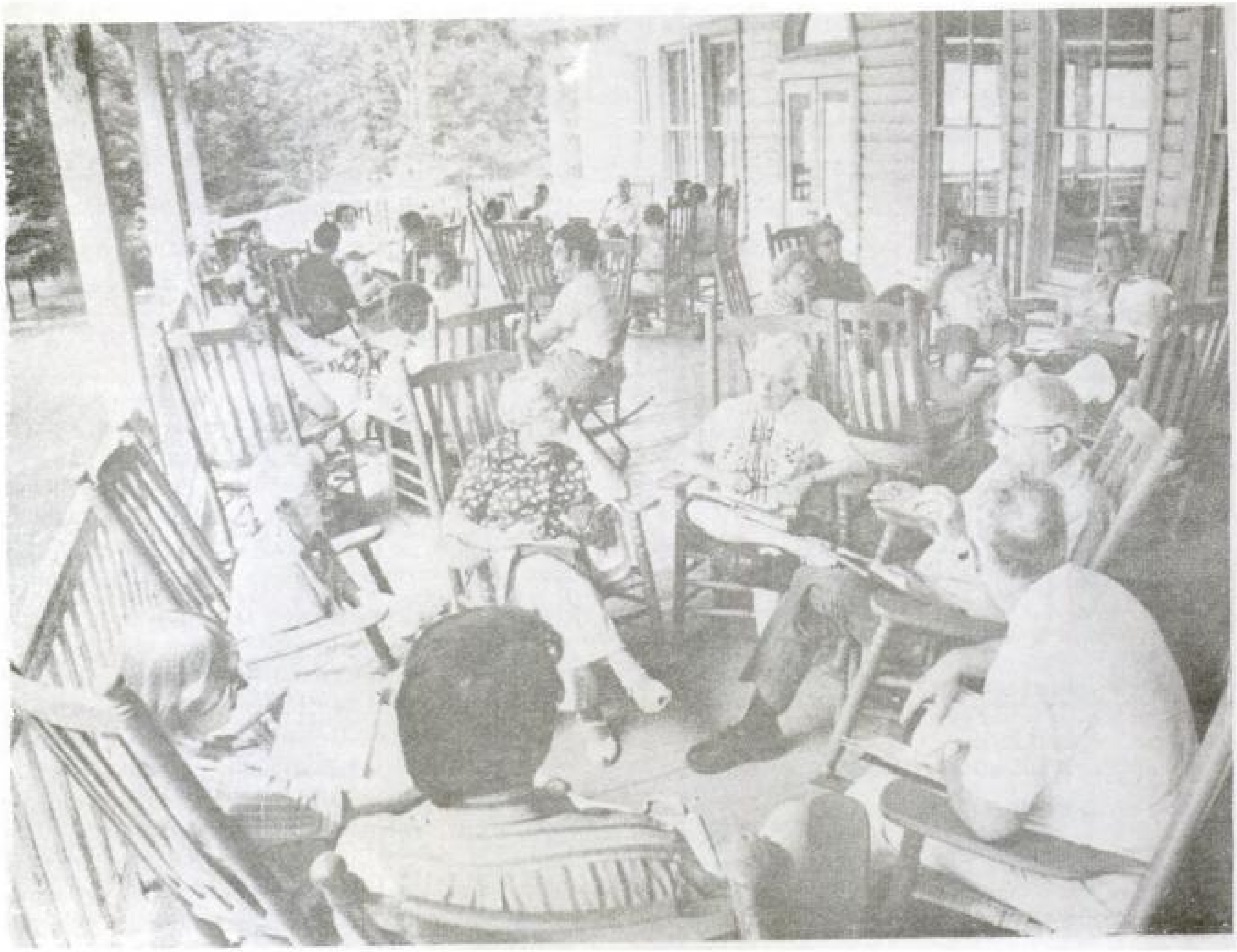
FIGURE 13-2 Unfavorable attitudes toward personal aging combined with unfavorable social attitudes toward aging result in a negative self-concept. (Adapted from T. H. Brubaker and E. A. Powers. The stereotype of "old": A review and alternative approach. *Journal of Gerontology*, 1976, **31**, 441–447. Used by permission.)

Equally important, the concepts people have of their own old age, built up in the early years of life and based more on cultural stereotypes than on personal experiences with the elderly, affect their attitudes not only toward elderly people but also toward themselves as they grow older. Because these effects are negative, it contributes to their dread of old age and to a negative self-concept. Figure 13-2 shows how this is done.

Social Attitudes toward Old Age

Stereotypes about old age have a pronounced influence on social attitudes toward both old age and old people. And because most stereotypes are unfavorable, social attitudes likewise tend to be unfavorable. As Bennett has pointed out, "It is hard to glamorize aging or give it sex appeal" under such conditions (9).

How unfavorable social attitudes are has been emphasized by a nationwide survey of social images of the elderly in different areas of behavior as compared with self-images of the elderly. Figure 13-3, based on the results of this survey, emphasizes the difference between the social image of the elderly—the image on which social attitudes are based—and the images the elderly have of themselves—self-images (15). Note that, for the most part, the elderly have a more favorable image of themselves than the social group has of them.



One of the problems unique to old age is making new friends to replace those who have died, moved away, or are invalided. Homes for the elderly offer excellent opportunities to solve this problem. (David Strickeler from Monkmeyer.)

lives they have had to be affiliated with individuals of all age groups. Regressing to this earlier pattern of social life is often difficult because it means that the individual must now become affiliated with a group that is largely rejected by society. Having known since childhood and adolescence that affiliation with a rejected group brings little prestige, old people have little motivation to become involved with such a group.

Certain problems of adjustment resulting from these developmental tasks are unique to old age. The most common of these are given in Box 13-1.

ADJUSTMENT TO PHYSICAL CHANGES IN OLD AGE

While it is unquestionably true that physical changes do occur with aging and that these changes are, for the most part, in the direction of deterioration, individual differences are so marked that no two people of the same age are necessarily at the same state of deterioration. Furthermore, within the same individual there are variations in the rate of aging of different parts of the body. The organs of reproduction, for example, age sooner than the other organs.

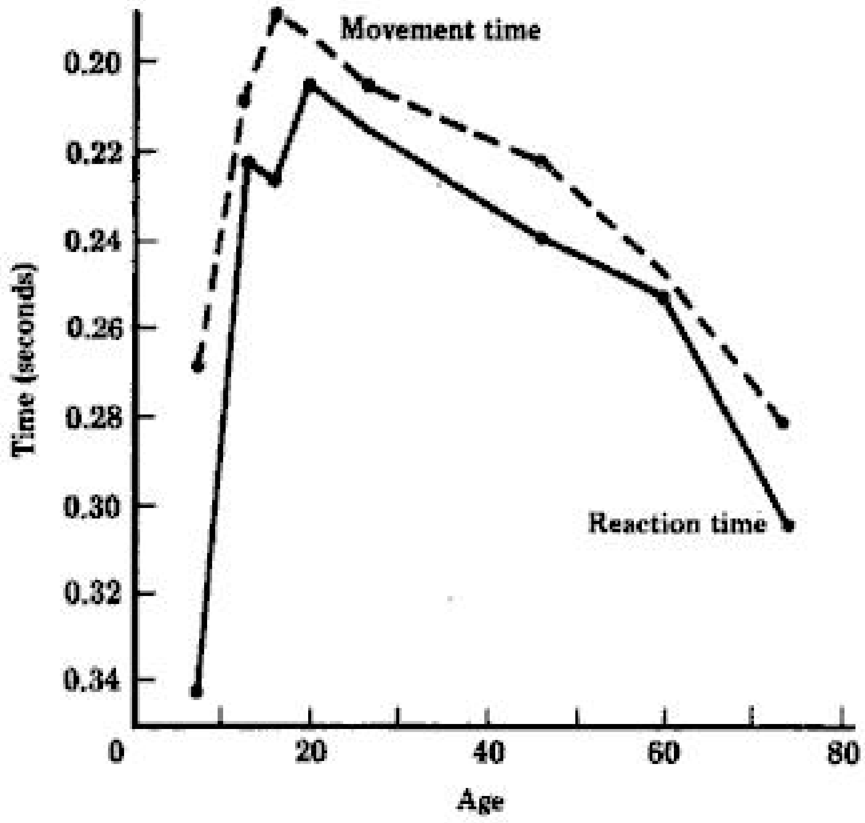


FIGURE 13-5 Speed of reaction and of movement decline sharply as age advances. (Adapted from J. Hodgkins. Influence of age on the speed of reaction and movement in females. *Journal of Gerontology,* 1962, **17**, 385–389. Used by permission.)

What may be interpreted as poor comprehension resulting from intellectual decline may be due primarily to poor hearing. As hearing decreases, many elderly people fail to grasp what others say and their responses suggest that they are not as mentally alert as they formerly were (69).

How Great Is Mental Decline in Old Age?

It is important to recognize that the mental decline associated with old age may not be as great as popularly supposed or as reported in earlier studies. As has been pointed out, there is a growing belief that what is assumed to be a decline in mental ability may be the result of discrepancies in the choice of groups at different age levels for comparisons and of the differences between education now and at the time the elderly groups were schoolchildren. Schaie et al. (129) have emphasized the importance of this:

> *Conventional cross-sectional studies confound historical (generational) with individual (ontogenetic) change components. Since such designs sample individuals differing not only in age but also in terms of generation-related environmental backgrounds, the resulting age differences provide most inappropriate evidence for ontogenetic change.*

Other conditions may account, to some extent, for the apparent mental decline that accompanies age. Most old people, for example, are not familiar with testing, are not sympathetic toward it, and refuse to be tested. This biases the samplings used for studies and usually means that institutionalized persons must be used for studies of old-age groups, thus giving an unfair sampling of the old-age population and an inaccurate picture of how mental abilities are affected by aging (83).

In addition, since it is known that speed of action slows down with advancing age, tests of mental ability that emphasize the time element are unfair to elderly subjects. In measuring mental abilities, the ability to cope with mental tasks must be considered free from the influence of speed and other factors that may obscure mental abilities.

Because of the contradictory evidence available today about decline in mental abilities, Horn and Donaldson have warned (82):

> *There are results which caution against the view that all of the abilities which are believed to be involved in intelligence necessarily decline or decline in the same way; some abilities may decline little or not at all. Also, there are results which caution against supposing that decline necessarily occurs for all subjects or necessarily sets in as early as might be supposed from considerations of cross-sectional data alone.*

The only way to measure the amount of decline precisely is to have an accurate record of the individual's abilities at their peak and then to determine from this standard the percentage of decline that sets in at different ages. To date, as has been stressed earlier, few studies have been made using the longitudinal method; most have been made using samples from different age levels—the cross-sectional method (4, 64). One longitudinal study reported decline to be far less than is popularly believed (6). See Figure 13-6.

Variations in Mental Changes

As in all other areas of decline, there are marked individual variations in mental decline. There is no one age at which the decline begins and no specific pattern of decline that is characteristic of all old people.

In general, those of higher intellectual levels experience relatively less decrease in mental efficiency than those of lower levels. Studies of gifted individuals carried out over a long period of time, for exam-

might be impossible for her to marry a retired man and live on his social security and pension benefits. However, if the couple's combined incomes would make a comfortable lifestyle possible, they may accept living together without marriage as a solution to their problems.

Older couples who live together face the possibility of the strong disapproval of grown children, relatives, friends, and neighbors. Some cope with this problem by moving to another community where new friends and neighbors will not know of their marital status. Others remain in their home community, ignoring the attitudes of others and maintaining that the enjoyment and satisfaction they derive from their chosen lifestyle more than compensates for its disadvantages (32,59,91).

ADJUSTMENT TO SINGLEHOOD IN OLD AGE

The popular belief that an old person who has never married will face an unhappy, lonely old age is not borne out by real experiences. The single man has learned over the years to develop interests and become involved in activities to compensate for the lack of companionship of a family of his own. As a result, he is less likely to face a lonely old age than the man who married, whose interests centered around his home and family, and who now, in old age, may find himself without wife and children.

The modern, older single woman builds up a life of her own, just as a man does. As a result, she has much to keep her happy and occupied in old age. Even though she is retired, she usually has the benefit of a pension or social security, in addition to what she has saved, to enable her to live and do much as she pleases. And because she never had to devote her leisure time to a family, she has had an opportunity to establish many interests that will keep her from being lonely when she reaches retirement age (14).

LIVING ARRANGEMENTS FOR THE ELDERLY

Patterns of living vary much more in old age than in middle age, when the pattern is well standardized. Five patterns are common among the elderly today: a married couple living alone; a person living alone in his or her own home; two or more members of the same generation living together in a nonmarital relationship, such as brothers and sisters or friends; a widow or widower living with a married child and/or perhaps grandchildren; and an elderly person living in a home for the aged or in a club or hotel (12,107, 115). Which pattern of living the elderly individual selects will depend upon a number of conditions; the most important of these are given in Box 14-5.

Needs in Living Arrangements

The needs and wants of elderly people vary greatly; therefore living arrangements must vary as well. However, almost all elderly people have certain physical and psychological needs that must be met by their living arrangements if the arrangements are to maintain health and happiness (76). These are given in Box 14-6.

Types of Living Arrangements

Today, the growing realization of the importance of living arrangements suited to the physical and psychological needs of the elderly has resulted in the growth of new living quarters, planned specifically for the elderly. Some of these quarters are financed by the federal government for those with low incomes and are, therefore, open to all those whose incomes fall below the limit specified by the government, regardless of their religion, race, or other factors. Other quarters are financed by private builders or are sponsored by religious, civic, or social groups. For the most part, these groups do not discriminate though they usually require personal interviews and letters of recommendation to ensure that individuals will share common interests and backgrounds, thus contributing to harmonious relationships.

While different age limits may prevail, the usual minimum age ranges from fifty-five to sixty years for one spouse. The other spouse, generally the wife, can be of any age. Some living quarters for the elderly, such as retirement homes, have a maximum age limit—usually 80 years. One reason for these age limits is to avoid accepting those who may, within a short period of time, become incapacitated by illness or accident. Another reason is because when homes or apartments for the elderly must be bought instead of rented, it will be fairer to keep the elderly from making an investment from which they may get only a very short use.

Among the forms of living arrangements for the

You have either reached a page that is unavailable for viewing or reached your viewing limit for this book.

OTHER BOOKS OF INTEREST

D'AMATO	EXPERIMENTAL PSYCHOLOGY
FELDMAN	UNDERSTANDING PSYCHOLOGY, 6/E WITH CD
HURLOCK	CHILD DEVELOPMENT, 6/E
HURLOCK	CHILD GROWTH & DEVELOPMENT, 5/E
HURLOCK	PERSONALITY DEVELOPMENT
LAHEY	AN INTRODUCTION TO PSYCHOLOGY, 6/E
MORGAN	A BRIEF INTRODUCTION TO PSYCHOLOGY, 2/E
MORGAN	INTRODUCTION TO PSYCHOLOGY, 7/E
PAGE	ABNORMAL PSYCHOLOGY
PAPALIA	HUMAN DEVELOPMENT, 9/E WITH CD
RAO	COUNSELLING & GUIDANCE, 2/E
SCHAEFFER	SOCIOLOGY, 6/E

*The **McGraw-Hill** Companies*

Tata McGraw-Hill
Publishing Company Limited
7 West Patel Nagar, New Delhi 110 008

Visit our website at : www.tatamcgrawhill.com

ISBN-13: 978-0-07-099363-1
ISBN-10: 0-07-099363-7

9 780070 993631